ARCHITECTURAL RECORD

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ARCHITECTURAL

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THE RECORD REPORTS

Report on the Taft Committee's Postwar Housing Study

Status of Reconversion • Airport Subsidies • Highways

As it was first outlined last year, Senator Taft's study of postwar housing problems followed the principles of good architectural design. The plan for inquiry had a structure in which search into broad issues of public policy, on the one hand, and into matter-of-fact but vital detail on the other, were aptly matched. But after the whole affair had been blueprinted, after the preliminary questionnaires had been sent out and the replies received and collated, witnesses were called on to testify and the elaborately scheduled study slipped easily into typical Congressional hearings.

On one side of a shiny oblong table sat Taft and a few other Senators; on the other were government officials, real estate men, union leaders and others, who read long statements. Those who testified sometimes observed hopefully later on that it was a fine thing to have gotten some particular point or some set of figures "into the record," even though the record continuously collected by Congressional committees is too massive for Congressmen to read.

The study met the fate of almost everything else planned before the winter. When the housing committee was organized, Washington's greatest fear was of an early military victory for which the economy was unprepared. In the heat of reconversion zeal, the executive agencies set up bureaus and Congress postwar committees whose work went on. The Taft committee, which stems from Senator George's Committee on Postwar Economic Policy and Planning, is one among many others.

Housing Plans

Because of immediate war needs, Blandford of course realizes that in the housing industry as elsewhere emphasis would have to shift from the future to the present. Much less time could be given to postwar planning. Blandford suggested to Taft that he postpone the hearings. Taft did not want to do that, but instead set only a short period for collecting testimony, issuing a report, and getting done as much as possible.

When the hearings opened, Senator Wagner, who introduced and steered through Congress much of the present housing law, pointed out bluntly that his own Banking Committee and Senate Committee on Education and Labor would have to make their own investigation before any housing bills were put before the upper chamber. It might be added that in the House any bill would pass through the Banking Committee headed by Spence, who works closely with his Senate colleague. The fact that postwar planning might take attention from the war also makes early housing legislation unlikely. But the facts and opinions collected by Taft suggest that when it does come it will cover a lot of ground.

Role of Government

Among the building lobbyists there was as much interest in the form of the government's housing agencies as in their powers to act. Backed expressly by AFL, CIO and the local housing commissioners (and, presumably, by the President, Senator Wagner and Representative Spence), Blandford wants a permanent NHA which will carry out whatever housing duties the federal government given.

The organizations representing th building industry, on the other hand, opened their campaign to relate FHA and the Federal Home Loan Banks to RFC, and the Public Building Administration to the Federal Works Agency, with statistical work going to an enlarged division in the Department of Commerce. In most industries the plea is usually to deal with a single organization: food people, for instance, sometimes ask that War Food Administration ration and set price ceilings; oil men want to deal only with the Interior Department.

This would suggest that the intimacy that often develops between an industry and a government department that works with it, failed, somehow, in the case of housing. In fact, the lobbyists mostly are on the friendliest terms with Blandford and, when they intend to testify before Congress or make speeches against NHA, they tell him about it first in apology.

Rent Certificates

The issue which was argued most, however, was that of public housing. Again and again Taft indicated to witnesses that he accepts the idea of housing subsidies "in principle," so that the questions are amounts and methods of spending. Should empha-

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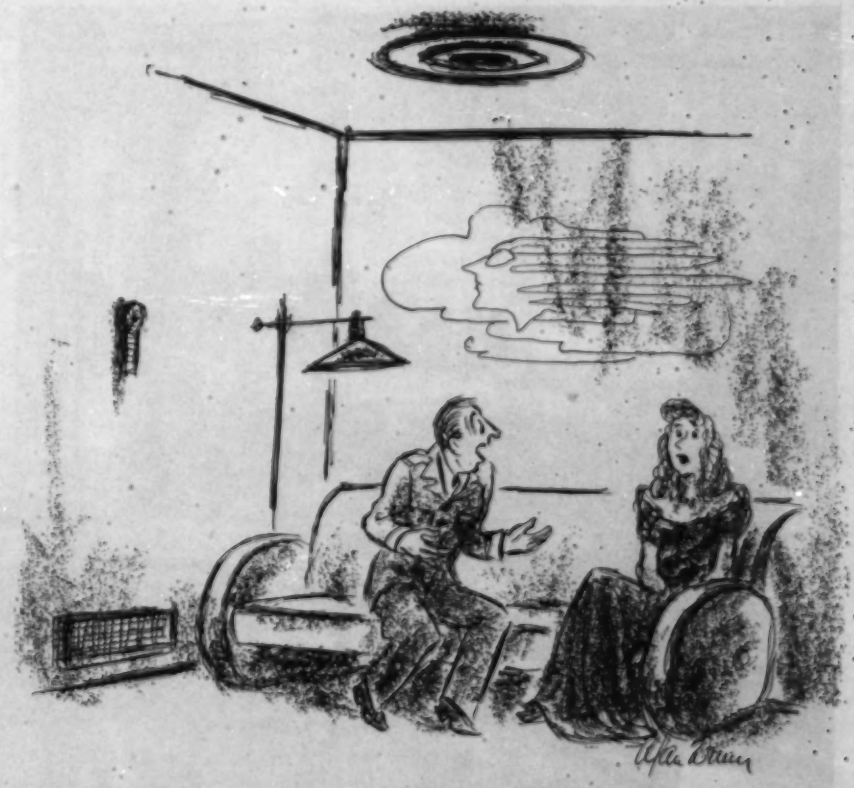

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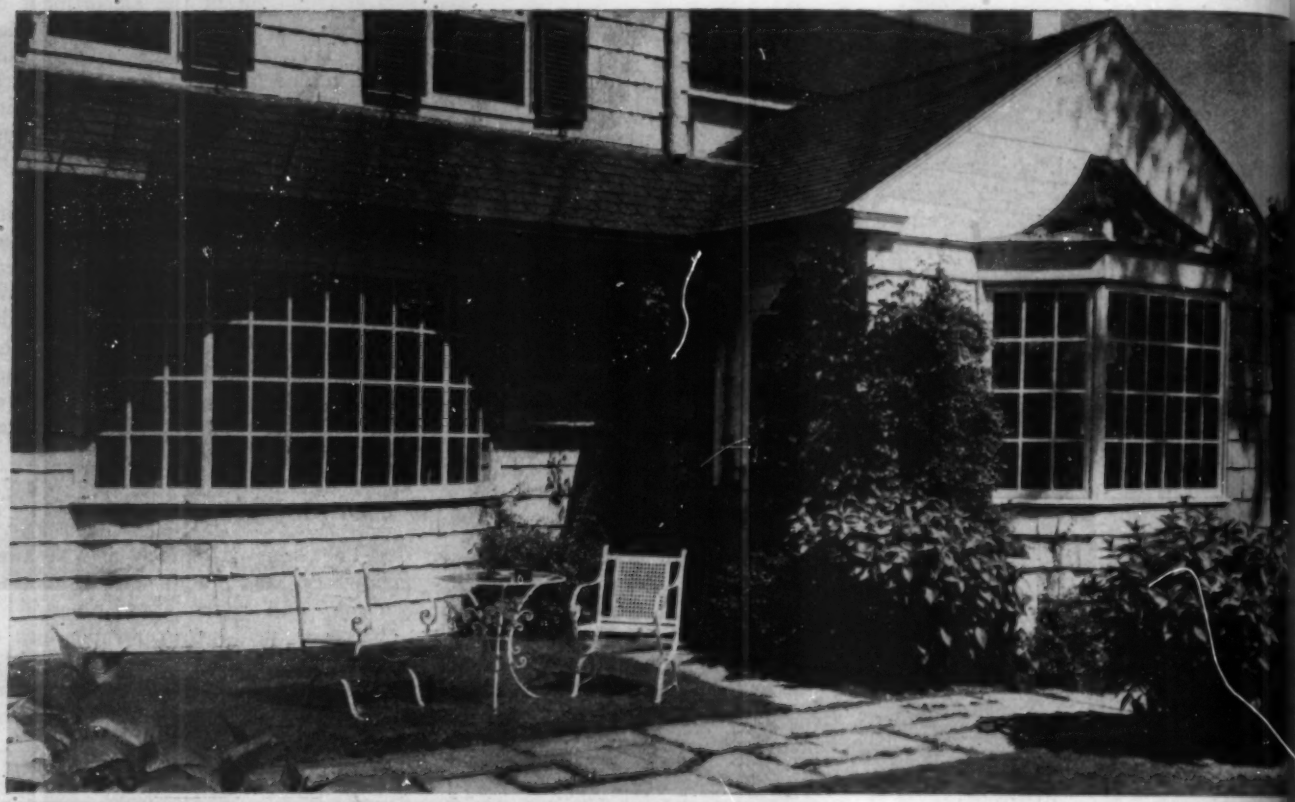
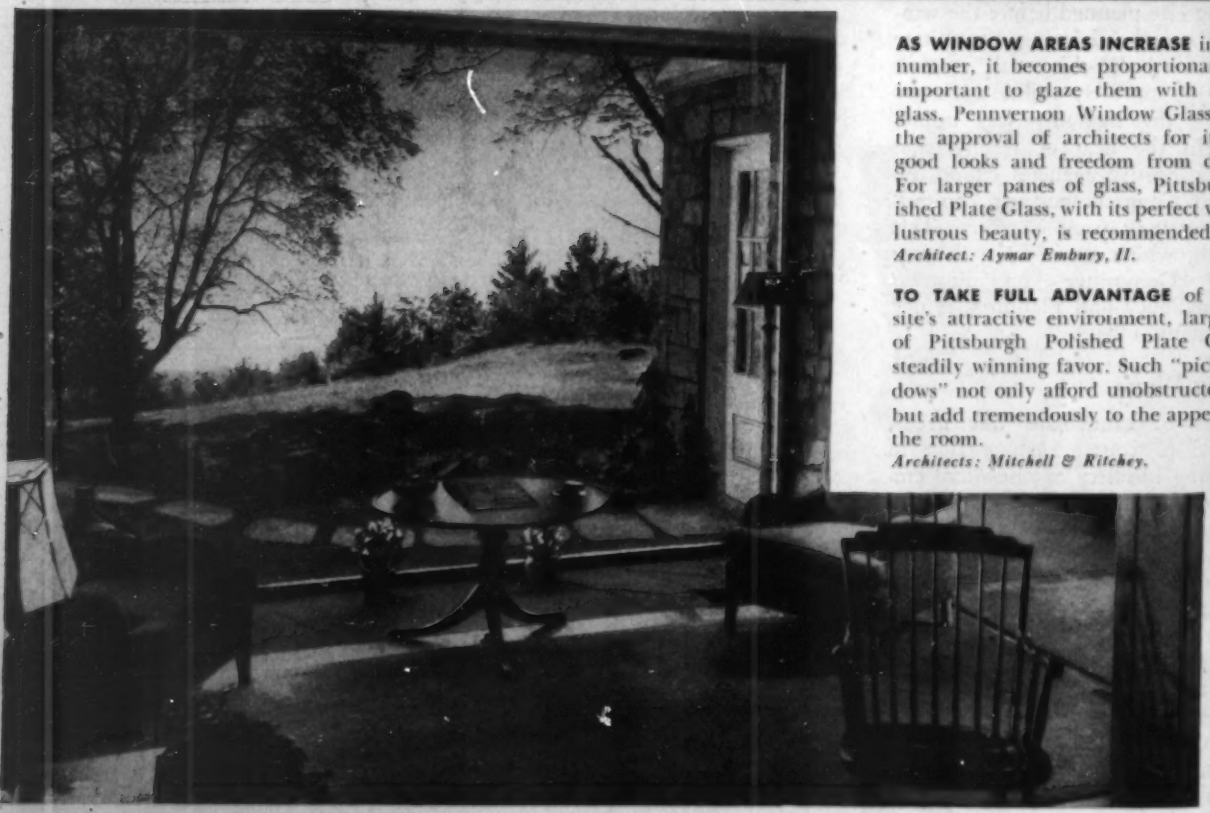
—Drawn for the RECORD by Alan Dunn

INTERESTING APPLICATIONS OF





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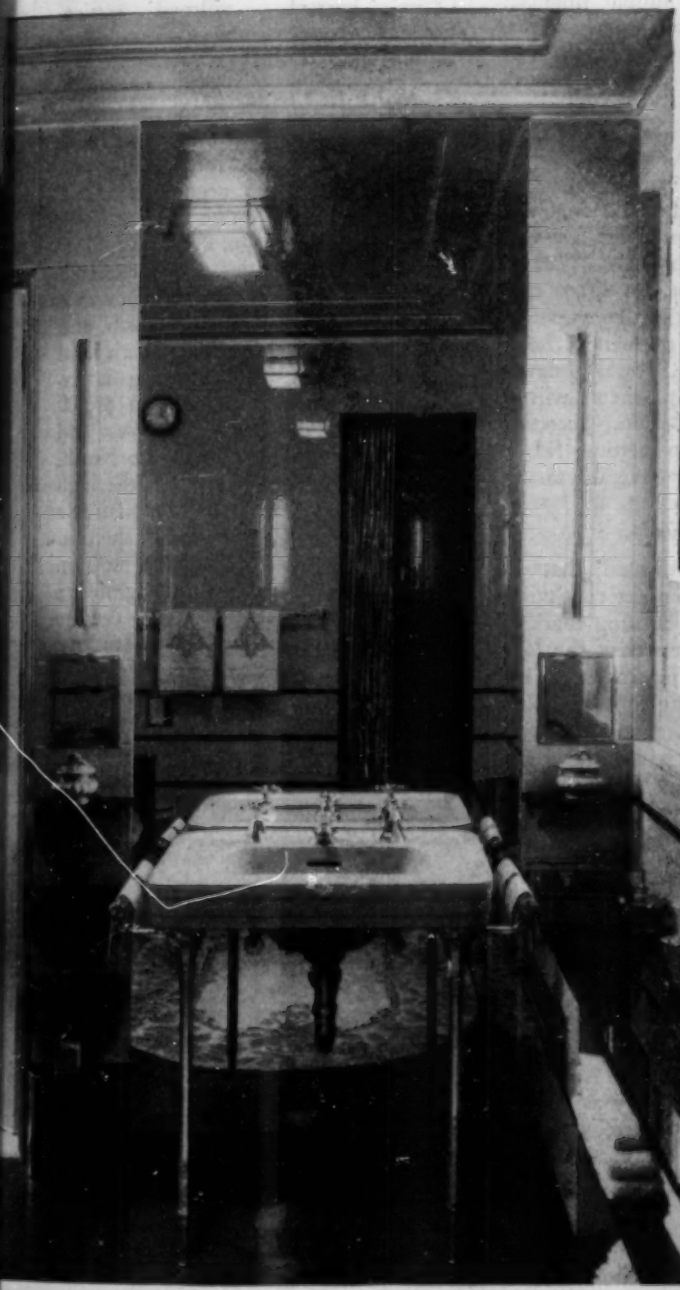

THE POSSIBILITIES for achieving striking effects with mirrors are much broader today than they used to be. This is largely due to the variety of colors and backings in which mirrors are available. Pittsburgh Mirrors, for example, may be made of clear, flesh tinted, green or regular Plate Glass, with silver, gold or gunmetal backings.
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 (Continued from page 7)

sis be placed on new construction, or on remodeling old dwellings? Should subsidies be given to local authorities as at present, or to private contractors and landlords? Taft himself interrupted several carefully prepared arguments against doling rent certificates to the worthy poor, exclaiming impatiently that he has no sympathy with that idea.

Blandford's presentation, which opened the hearings on January 9th, covered everything: war housing, housing in national economy and family economy, present construction, veterans' housing, postwar needs, building costs, financing, NHA structure, etc. The themes announced in Blandford's prelude were taken up by heads of the particular agencies within NHA whose variations were sometimes on the obvious side.

Construction Insurance

Blandford put out some information that is full of interesting possibilities—ideas for future financing of FHA. One of his proposals is to guarantee building loans as well as the mortgages of home and apartment owners. Builders could be assured of adequate construction money at low cost. The effectiveness of such a plan, he said, would depend on the reductions in building and maintenance costs that it would make possible.

The Administration also contemplates clauses in future FHA mortgages giving home owners periods of grace in the event of default because of sickness or unemployment. By encouraging the building of cooperative apartments under FHA mortgages, similar benefits may be given to those paying rent.

Guarantee of Profits

Another idea was to guarantee minimum profits to insurance companies and others putting their own money into large projects. In return for the assured income, the companies would have to accept rent ceilings which, in effect, would entail maximum as well as minimum profits. Criticisms were made that insurance company trustees would require a minimum return of the yield on government securities plus estimated management cost which would be higher than that of local housing authorities. Blandford elaborated this plan in several private conferences.

Another suggestion was that the federal government make 2 per cent loans, for land acquisition and development, to cities or public authorities to be amortized over 99 years. An alternative would be for the government to guarantee land-purchase loans sold directly by the housing authorities. Blandford estimated that such financing would cut annual financial charges on land by about two-thirds, adding that if it proved inadequate some further subsidy should be considered.

Senators commented that use of federal credit to get cheap money for home builders might, with equal justice, be applied to any industry whatever. Whether housing authorities should be subsidized through federal guarantee of their bonds or by direct cash contributions is among the questions to be decided when permanent housing law is written. Several Senators feel that annual cash payments will be easier to control. Besides, Secretary Morgenthau has been getting rid of guaranteed bonds for several years.

Community Surveys

Blandford also indicated that he wants communities to make continuing surveys of their own housing markets, covering the requirements of the local populations of varying incomes. His agency is now working up a pamphlet describing how studies of the kind should be made. It will follow techniques used by local FHA officials in deciding whether to insure particular projects. Behind the suggestion lies NHA discontent with effects of the spontaneous growth of cities, leaving old neighborhoods in decay as real estate operators stake out new ones.

Copious figures were put into Taft's record showing how much more sharply home construction fluctuates than other typical economic indices. The probable aim was to stress the importance of the industry as a single factor in the economy, thereby suggesting that it deserves a special place in government.

War Housing

Philip M. Klutznik, who heads the FPHA, told the committee that destruction of war housing is the last thing many communities want. Instead, they want the houses for those driven from the slums by slum clearance projects. Proposals for such conversion will be submitted to Congress, case-by-case.

The FPHA has found that its temporary shelters can be moved about. The trick is to take out the fixtures and to saw roofs, walls and floors into panels which then are shipped to new sites. Shipment, Klutznik said, saves from $300 to $1,000 per unit. He found that turning these houses over to salvage contractors required additional outlays of about $200 each. The dwellings are being used as substitutes for new construction at home and in liberated Europe. NHA hopes to sell the remainder after the war as barns, Okies' barracks, railroad section houses, roadside lunchrooms, filling stations and country schools.

Outlook in Cities

Seward H. Mott, of the Urban Land Institute, told about round table surveys of opinion his organization had taken among real estate men, bankers and others in Chicago, Cleveland, Denver and other cities. The expected price range on low cost houses is $4,000 to $6,000 in the North and $3,000 to $4,500 in the South and West. Medium price building is expected within the range from $5,000 to $9,000 in the South and West and from $6,500 to $10,000 in the North. Houses above $10,000 are in the high brackets everywhere. In the first two postwar years, 67 per cent of the construction is anticipated in the medium range, with 23 per cent going to the low-priced homes and 10 per cent to the high. Migrating war workers leaving vacant houses and apartments behind them will restrict the market for building new low-priced dwellings. Of the total construction, he estimated that 15 per cent to 25 per cent would be for veterans' financing under the GI Bill of Rights.

Mr. Mott said that among contractors there is greater interest in building whole communities, complete with shopping centers, schools, playgrounds and churches. Chicago and Los Angeles have master plans for the creation of such neighborhoods. There is some interest among contractors in joining hands and credit to undertake such ventures.

Status of Reconversion

At WPB any interest in reconversion ranks as outright heresy. Little remains now of the big splurge of last fall into postwar planning. The Construction Bureau has fallen into routine which is the exact reflection of that of the old Facilities Bureau in its sternest days. For a while, applications to build were winning approval if they did not blatantly take men or materials from war plants. Now the word "No" is the familiar one as applications pass through the hands of officials.

John Hayes, who succeeded McComb as bureau director, was reasonably well known to Washington lobby-

(Continued on page 12)

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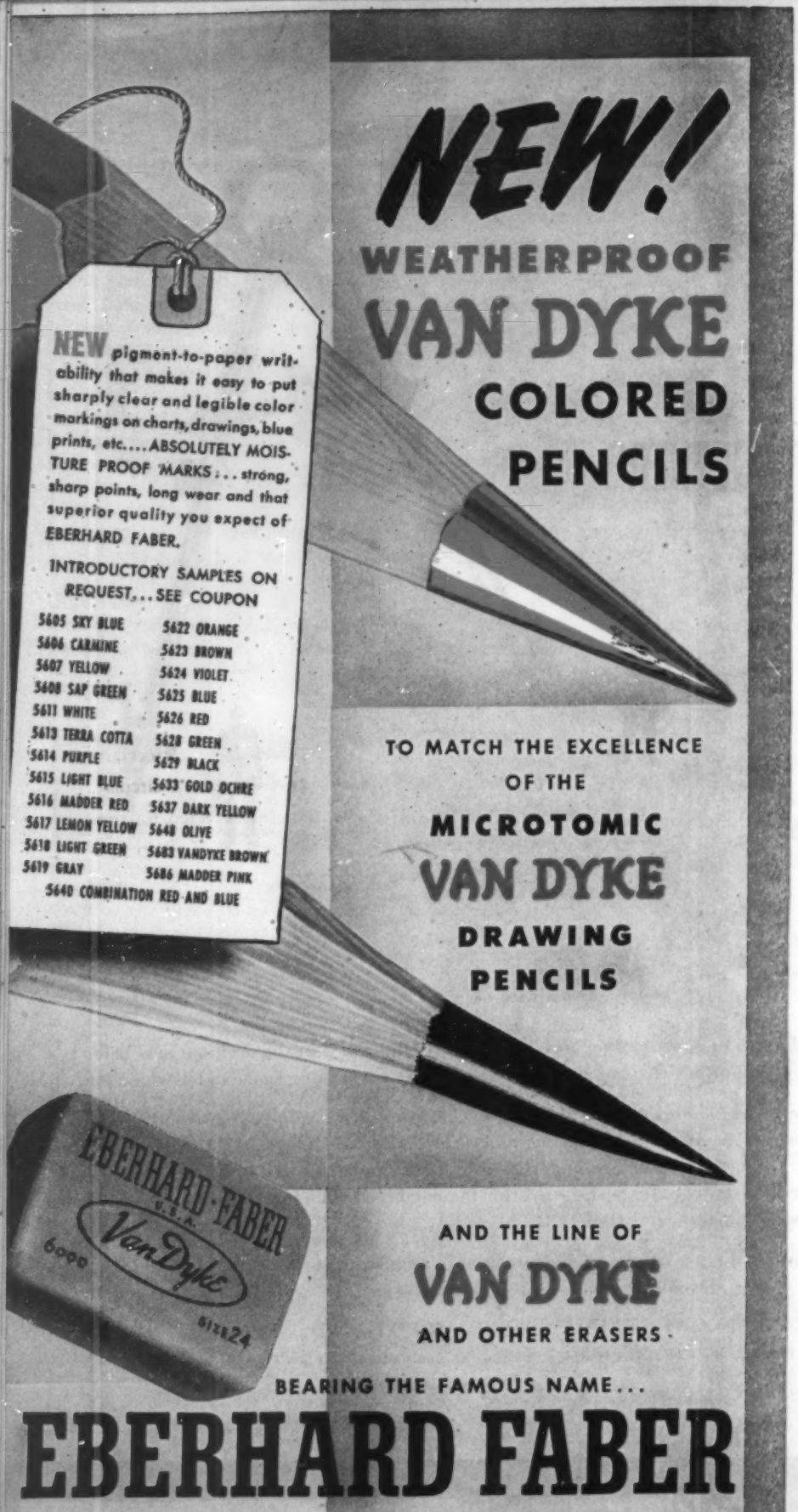

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THE RECORD REPORTS

(Continued from page 10)

ists and newspapermen before he took the job so that there was no sudden demand for meetings and interviews. No important changes in the rules are being considered. The change in emphasis from lenient to strict interpretation of regulations is not peculiar to the Construction Industry, but runs through all of the war agencies. How much the emphasis has changed will be apparent as current construction figures are published. Last fall when reconversion was at its height, movies, schools and the like were being sanctioned in much greater numbers than they were a year ago; now figures have fallen again.

The President's budget gives some figures on contemplated building in the near future—in the June 1945-1946 fiscal year. In asking for money for NHA, Roosevelt said:

"The Budget is based on the assumption that the supply of materials in the fiscal year 1946 will be sufficient to permit a total volume of private construction in 1946 of about 175,000 units. Increased attention will be given in 1946 to the problems of the disposition of war housing and of the relaxation of wartime restrictions. The problems of over-all Agency supervision will be increased somewhat because of many long-range questions raised by the transition to a postwar program."

Airport Subsidies

Congress is busy with ideas for subsidizing airports but usual quarrels are developing about how to divide the subsidy. The Civil Aeronautics Administration sent to Congress a general outline of a scheme for building ports through the next decade. As different Congressmen introduce bills embodying CAA ideas, they give them special slants which, in one way or another, will have to be compromised when final legislation is drafted.

The great issue is how much to concentrate on ports for big and smaller cities. The earlier bills called for cost sharing with states to which mayors, who do not always get along with the governors, strenuously objected. Dividing the money necessarily will be a delicate problem. To get votes for a particular bill, it is helpful to provide ports for the communities of large numbers of Representatives. This puts a premium on small ports which the plane manufacturers—who dream of a family market—want. But it may win the enmity of large contingents

(Continued on page 116)

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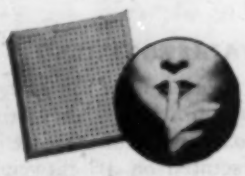

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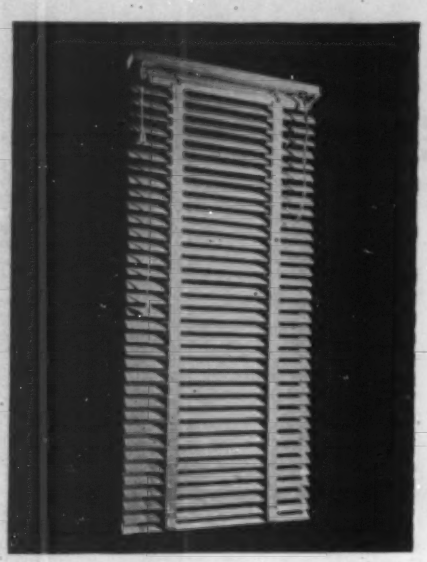

An idea for the future: experimental venetian blind in Dowmetal (magnesium)

POSTWAR PLASTICS POSSIBILITIES

There has been considerable speculation about the place of plastics and the light metals in postwar construction. Some indication of possible uses for these materials come from the Dow Chemical Co., Midland, Mich.

Dow reports an experimental venetian blind fabricated in Dowmetal by the National Venetian Blind Co. of Los Angeles. Although not now available, this use of magnesium offers possibilities for the future, Dow points out, particularly in the case of extremely large units which in steel may weigh as much as 200 lb.

Other possible uses of magnesium and plastics in the architectural field as developed by Dow include: Saran window and door screens, already in use by the armed forces in all theaters of war; Saran fabrics for seat upholstery in trains, planes, boats, theaters, etc.; plastic door knobs, one of crystal clear transparent Styron; magnesium chairs upholstered in Saran woven fabrics; translucent blocks of Ethocel for stairway wells, etc.; furniture of Ethocel extruded rattan.

TERMITE-PROOFING

Protection against termites for 2 per cent of the total cost of a structure is made possible by the *Termitrol Patent*, a new invention just patented by J. W. Gunn, president of the Hollywood Termitrol Co., Inc., of Los Angeles.

The idea is to use pressure-treated lumber at those points in the structure most vulnerable to attack and at the same time place this lumber in such strategic positions that any infestation that might occur in other parts will be isolated and confined to a small area that can be replaced with a minimum of labor and cost. Any approved pressure treated lumber can be used provided it is treated with 8#, #1 A.W.P.A. creosote or approved equal.

"It is impractical to use pressure treated lumber throughout the framing of an entire structure," Mr. Gunn explains, "as the cost would be prohibitive. However, we have perfected this method of affording maximum protection against subterranean termite, dry wood termite, and dry rot attack so every new building can use it economically. Private loan agencies as well as the FHA have accepted Termitrol Patent as an additional cost that is completely justified because it will enhance property values and safeguard investments."

BUILDING PANELS

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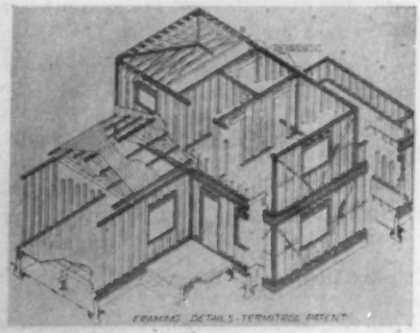
Design of the units provides smooth, flat panels of sheet metal complete with channel-type ribs, assembled at the factory. A variety of types and a considerable range of sizes permit their use in practically all types of structures including commercial, industrial and residential buildings and allow great flexibility of design in the structure. Some types will be filled at the factory with insulating material to provide sound-proofed walls, partitions, floors or roofs and to reduce heat loss.

The panels may be used under either wood or concrete floors; they will provide long-span roof deck in 20 to 25 ft. lengths; and the insulated wall and partition panels can be load-bearing in some types of structures. Detroit Steel Products Co., Detroit, Mich.

Details of new termite-proofing system



INSULATING MATERIAL WATERPROOFED

A new process of waterproofing *Santocel*, an insulating material which weighs as little as 3 lb. per cu. ft., opens up many new fields, the manufacturers report.

The chemical used to make Santocel water-repellent is an organic silicon compound which was developed by research chemists of General Electric Co., and is in itself considered a development of major importance.

A derivative of silica, or sand, Santocel pours like water and looks like finely-ground snow. Postwar refrigerators using it, the company predicts, will be thin-walled affairs occupying no more kitchen space than present models, but giving 40 per cent more cubic content. Monsanto Chemical Co., St. Louis 4, Mo.

New wall covering in a tile-like design

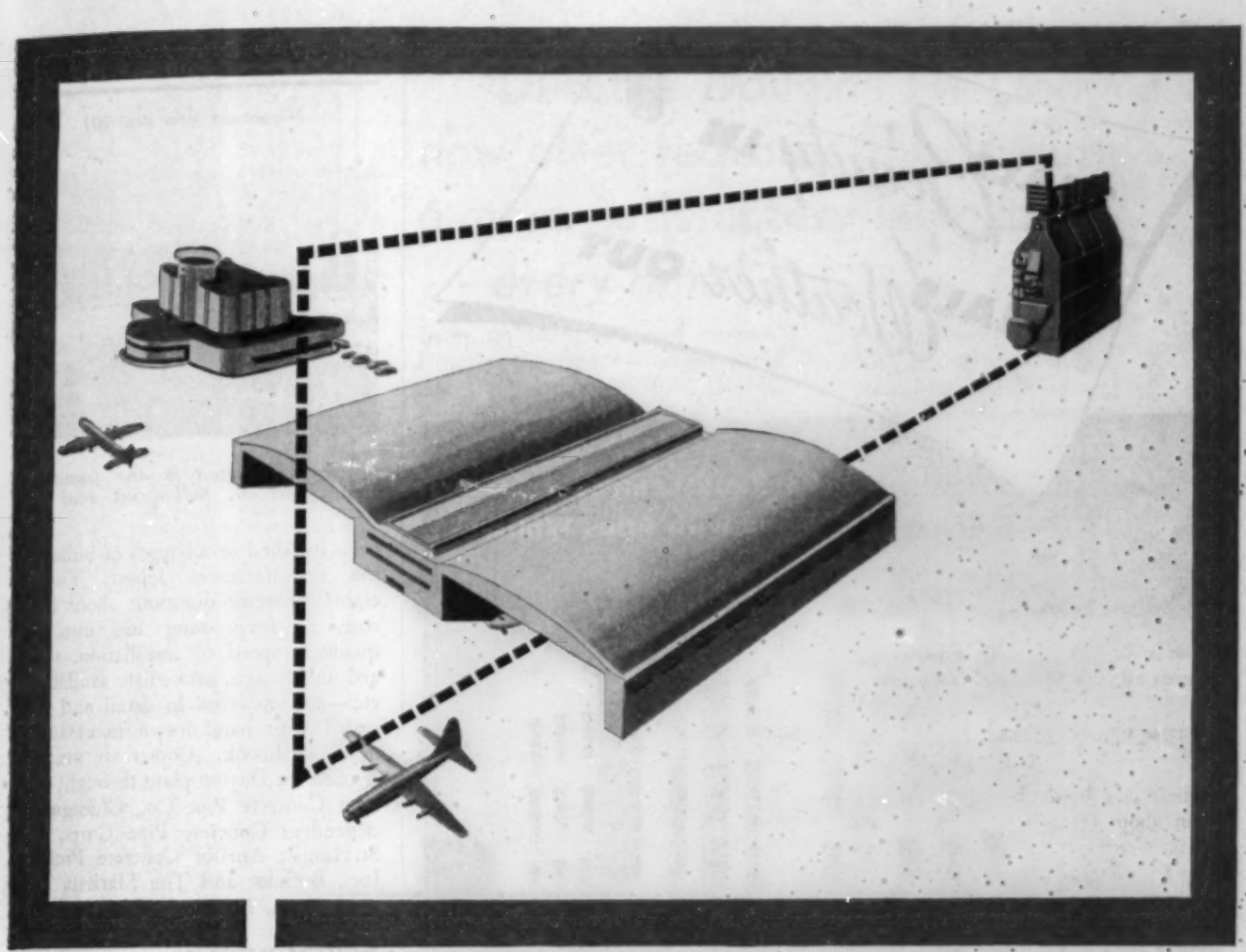
WALL COVERING

Quaker Wall Covering, a new low-cost product of the Armstrong Cork Co., is a durable, flexible covering manufactured on a lightweight, fresh-fiber felt backing with an enamel finish. Applicable for bathrooms, kitchens, laundries, etc., and for commercial establishments such as restaurants and food shops. Made in two designs and six colors: marbleized mellowtone in parchment, blue and peach; and tile in white, green and apricot. Armstrong Cork Co., Lancaster, Pa.

"FLEXICORE"

The long span-ability of *Flexicore Floor and Roof Slab* is only one of the many unusual facts described in the new sketchbook entitled "What is Flexicore?" Although this new precast, hollow-cast slab is not widely known, over two million sq. ft. have

(Continued on page 22)



Why buy a complex solution for a simple heating problem

Airport hangars and buildings are ideally suited to Dravo Direct Fired warm air heating—as simple and inexpensive a heating method as you could wish for!

Dravo Direct Fired heaters deliver their warm air direct, without employing the medium of steam with its complex distributing system. They can be located in the hangar space, with heat for offices or waiting rooms supplied by ducts. When gas or oil is the fuel, operation is automatic at the press of a button, and it is so simple that any 'port employee can handle the heating in a few minutes a day.

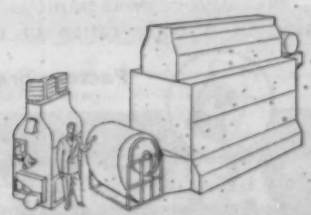
We're not guessing at these points! In the past few years Dravo has supplied heaters with a combined hourly output of 347,380,000 Btu's in more than eighty airfields in the U. S. and at advance bases! With that wealth of experience we recommend that every flier, executive or city official who will have an interest in tomorrow's airports learn the facts about Dravo Direct Fired warm air heaters—they produce cleaner heat, are less expensive in first cost and in operation, and require practically no attention—a truly simple solution to the space heating problem presented by the inherent features of airport design.

Ask for Bulletin 509—address DRAVO CORPORATION, Heater Department—300 Penn Avenue, PITTSBURGH, PA.

• • •

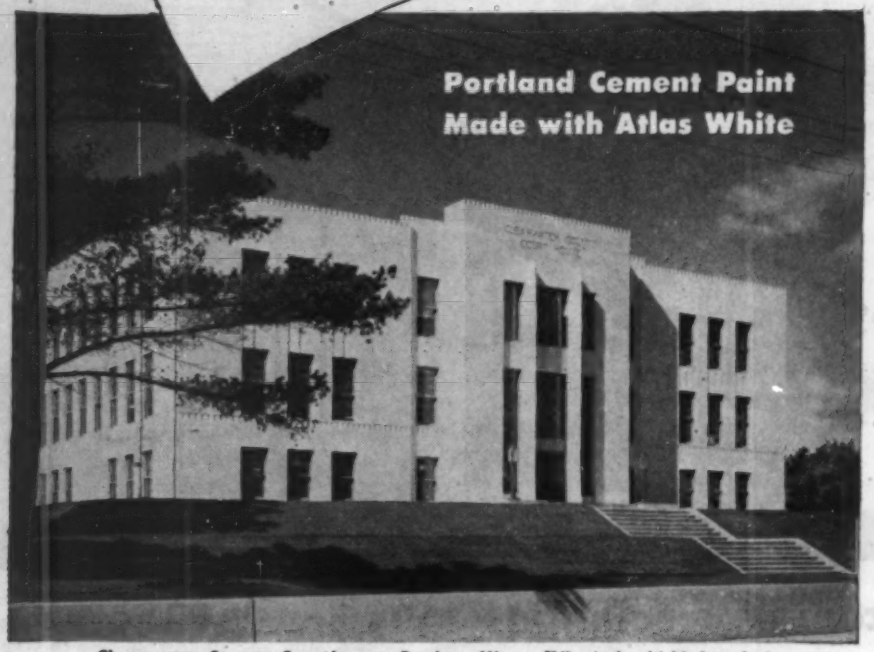
If your project is in blueprint or even preliminary plan stage ask for a Dravo Building Survey Report. Properly filled out this report will organize the data on which an estimate of installation and operating costs of Dravo Heaters may be based.

DRAVO HEATING



300,000 TO 4,000,000 B.T.U. CAPACITY, PLUS UNITS COMBINE FOR ANY DESIRED OUTPUT

SEALS Beauty IN
SEALS Weather OUT



Clearwater County Courthouse, Bagley, Minn., Effectively shielded against weather with a decorative finish of factory-prepared portland cement paint made with Atlas White cement. Architect: Foss & Co, Fergus Falls, Minn. General Contractor: A. Hedenberg, Duluth. (Photo courtesy Portland Cement Association)

Portland Cement paint made with Atlas White cement is prepared by a number of manufacturers in a wide range of colors. It is furnished as dry powder in conveniently sized packages ready for mixing with tap water on the job.

Penetrating the pores of masonry, this paint forms a lasting bond with concrete, concrete masonry, stone, hollow tile and brick which effectively seals out weather and moisture. It provides a surface which resists dirt and dust, and can be easily cleaned. Frequent repaintings are unnecessary.

Portland cement paint is available in a wide range of colors which are as lasting as its protective armor. When other than natural white is desired, the base of Atlas White cement assures full color value to the pigments used.

It is economical in first cost and easy to apply. One pound covers from 15 to 25 square feet of area for the first coat. Second coat covers about 30% more area per pound. Manufacturer's directions for mixing and applying should be followed.

For further information, write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, New York.

Factory-prepared paint is preferable

AR-P-6

ATLAS WHITE CEMENT
FOR PORTLAND CEMENT PAINT

FOR BETTER BUILDING

(Continued from page 20)

Speedy installation is one feature of a new precast, hollow-cast roof slab

been installed in all types of buildings, the manufacturers report. Twenty-eight important questions about Flexicore, its fireproofing and insulating qualities, speed of installation, standard unit design, immediate availability, etc.—are answered in detail and illustrated with hand-drawn notes in the new sketchbook. Copies are available outside the Dayton plant through: Midwest Concrete Pipe Co., Chicago; Independent Concrete Pipe Corp., Inc., St. Louis; Anchor Concrete Products Inc., Buffalo; and The Marietta Concrete Corp., Marietta, Ohio.

DEHUMIDIFIER

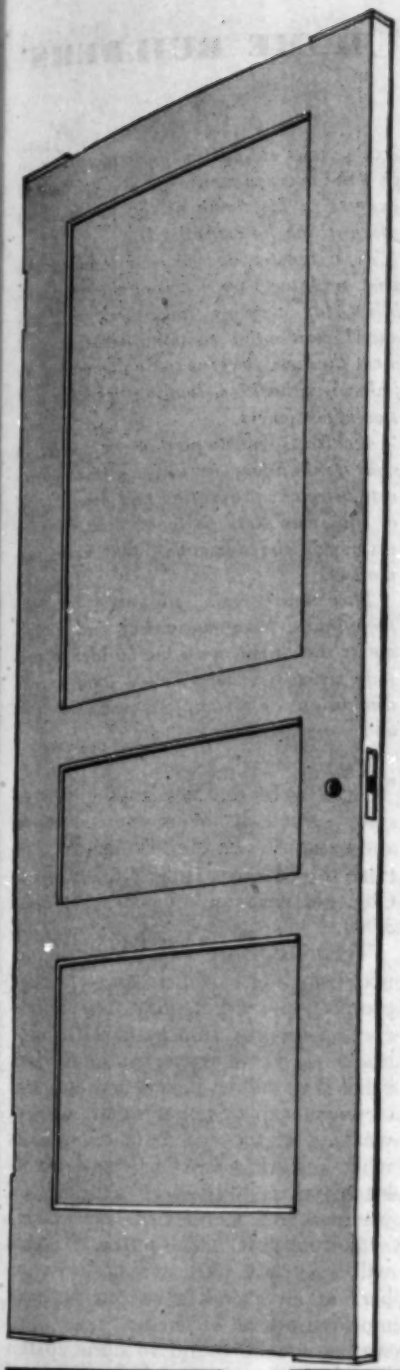
Exclusive features of design and operation in a new dehumidifier, the *Water-Sorber,* are said to enable it to draw an exceptional amount of moisture from the air per pound of chemical. These features are: (1) terraced construction, with three receptacles arranged one below the other to catch the residue liquid in descending stages and permit this liquid—which also contains active chemical—to continue to absorb additional moisture; (2) chemical cubes used in place of conventional types of absorbent, presenting more exposed surfaces and consequently a greater total absorption area to the moist air; (3) "flue-action" by which air enters at the bottom of the cube container through perforations, providing slower, more uniform and thorough melting of cubes.

The complete unit is shipped inside the air-tight metal container. It can be set up, ready for use, in a few seconds. General Air Conditioning Co., Oakley, Cincinnati, Ohio.

POSTWAR HOME SHOW

A full-size bungalow, built and equipped with materials and products expected to be used in postwar homes, is the feature of the "Postwar Home Show" currently on view in the offices

(Continued on page 128)



Durable Douglas Fir Doors now offer features that assure a more satisfactory installation - - *every time!*

Even an inexperienced carpenter can hang a FACTRI-FIT Douglas fir door — when these durable, attractive, modern doors are specified "FACTRI-FIT" all squaring, mortising and gaining or boring is done at the mill by high-speed, precision tools.

Douglas fir interior doors are available FACTRI-FIT right now for essential war-time building — and the moment war needs lessen they can be used in **all** types of construction.

Write for a new catalog showing the complete line of Douglas fir interior doors, Tru-Fit Entrance Doors and new specialty items. And remember— the modern trend in building demands that you specify Douglas Fir Doors "FACTRI-FIT". The slight additional cost of this complete machining is more than offset by savings on the job.

FACTRI-FIT

FEATURES

1

FACTRI-FIT doors are pre-fit at the mill, trimmed to exact size, ready to hang without sawing or fitting.

2

FACTRI-FIT doors may be ordered completely machined at your option—gained, bored or mortised by high-speed precision tools.

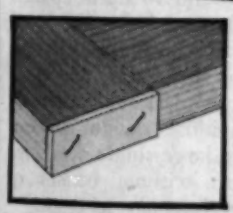
3

FACTRI-FIT doors (like all Douglas Fir Doors) are edge grade-marked for ease in ordering, specifying and supplying.

4

FACTRI-FIT doors are scuff-stripped to protect the precision-cut corners during handling and shipping.

1



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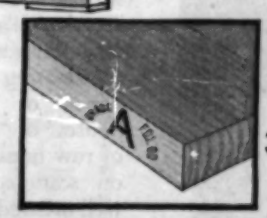

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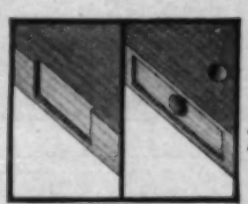


2

Douglas Fir DOORS

FIR DOOR INSTITUTE

Tacoma 2, Washington

Remember! NATURE MAKES DOUGLAS FIR *Durable!*

Durable Douglas Fir Doors are made from all-heartwood, vertical-grain, soft, old-growth Douglas Fir.

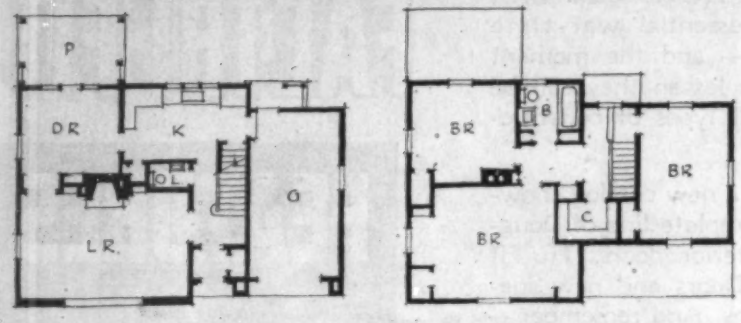
THE NATIONAL ASSOCIATION OF FIR DOOR MANUFACTURERS

NOTICE: Douglas Fir Interior Doors are manufactured three ways:

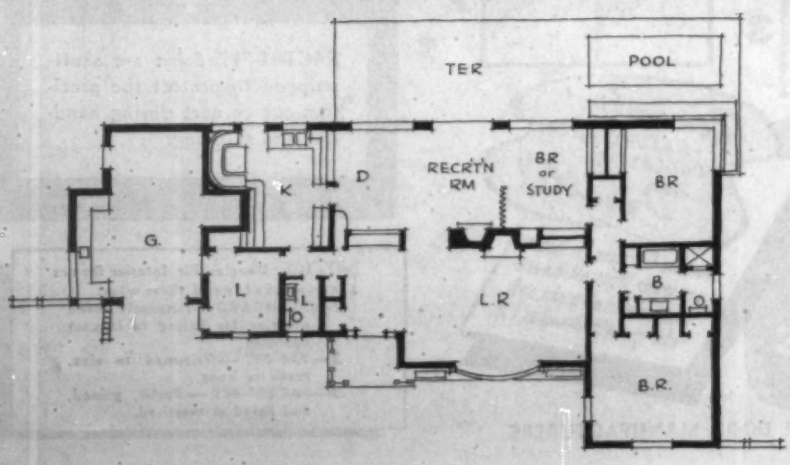
1—STANDARD — Purposely made oversize for fitting to inexact openings.

2—PRE-FIT — Trimmed to size, ready to hang.

3—FACTRI-FIT — Prefit, gained, and bored or mortised.



First Prize in the "City Home" class, won by Selby Construction Co., Lakewood, Ohio, Edward G. Conrad, architect. Designed for a city lot, it is estimated to cost $12,000



HOME BUILDERS

It may take skill little short of genius *give the average man what he desires* ***expects in his home of the future,*** *price which he can afford.*

To a greater degree ever than in ***past, architects must accept the respon-bility for creating integrated, well-balanced residential communities that*** *meet the new patterns to be demanded* ***federal authorities, lending agencies*** *the new owners.*

Architects must play a key role ***guiding builders in their postwar pro-ects to retain proportion and beauty,*** *at the same time fit their plans in* ***the needs and demands of the new*** *market.*

They must make allowance for ***techniques, new equipment and refine-ments which will help the builder to pro-vide what has been called "the fourth dimension of living," stressing comfort*** *and convenience.*

THESE were the outstanding impressions gained at the recent convention and exposition of the National Association of Home Builders, held in Chicago, with an attendance of some 3,000.

Their studies of trends and of products being developed to satisfy a huge prospective market, and their conferences with government experts, labor leaders and economists confirmed the belief that the developers and designers of housing in this country will be kept working at top speed for many years when materials and manpower are released; that millions of returning veterans and families of war workers heretofore unable to purchase homes will be ready and willing to do so barring an excessive rise in prices or too high a level of unemployment; that ways must be found to open up the broad new market; and that the trend more than ever will be in the direction of creating complete new neighborhoods of small, lasting, attractive houses of individual design, instead of row houses or large single dwellings on scattered lots without benefit of well-ordered development schemes.

It was evident that the builders recognized the prime necessity for adapting large-scale construction work and mass production methods to modern civilian needs to bring costs down within reach of millions heretofore overlooked in housing plans. Also, that the program of private enterprise must embrace also adequate living accommo-

First Prize winner in the "Suburban Home" class, by Charles H. Schreiber, Chicago; Arthur Schreiber, archi-

dations for the foreign-born, Negroes and other races long neglected but now in larger degree capable of assuming the responsibility of home ownership.

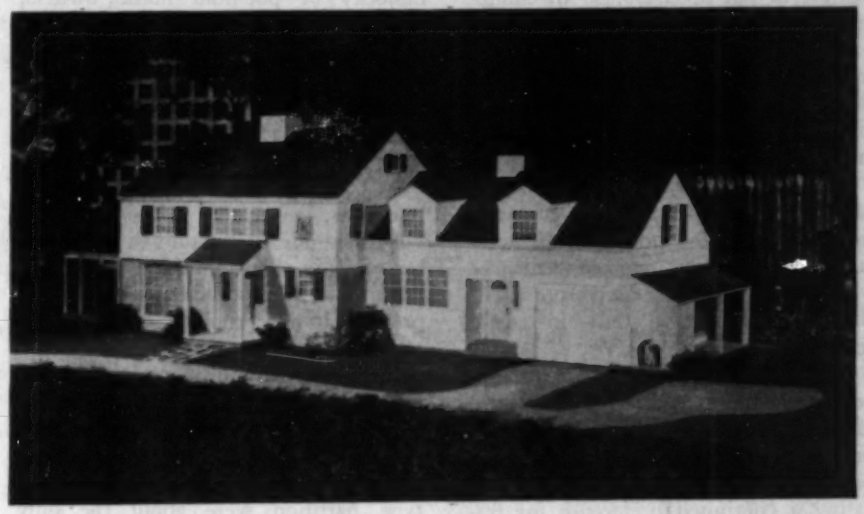
The builders accept the fact that construction economies must be achieved to reach all these groups, to obviate the need for a broader program of government housing, to which they are opposed.

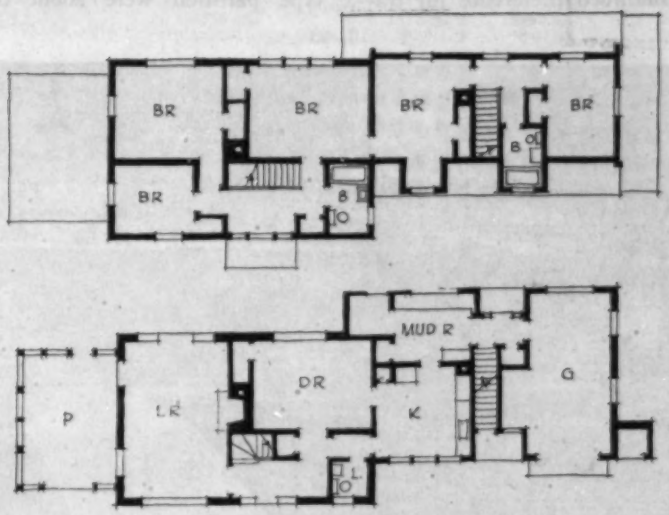
As a significant step in attainment of the common goal of better homes for the largest number of families, they decided to appoint a committee (with Robert P. Gerholz, of Flint, Mich., retiring president of the association, as chairman) to confer promptly with housing leaders and economists of the A.F. of L. and the C.I.O., whose cooperation they will require in any plan for use of new tools, prefabrication techniques, time-saving equipment, revision of outmoded building codes and possibly adoption of an annual wage which might be feasible on long-range, large-scale projects.

They believe that these conferences with labor will have an important bearing on reduction of unit costs and consequently on the amount of low-priced housing which may be built.

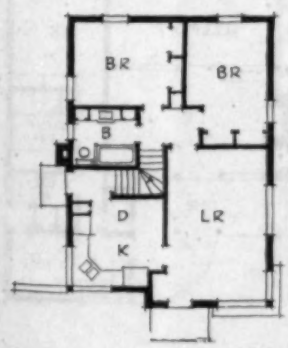
The association's decision to appoint this committee was inspired at least in part by the challenge thrown down by R. J. Thomas, president of the United Automobile Workers, C.I.O., who urged upon the convention a program embracing modern homes for all who need them, with a goal of 1,750,000 new dwellings annually to keep 2,250,000 workers employed steadily at the sites. He announced that the C.I.O. itself intended to embark on a program of "development of well-built homes in soundly-planned communities for, and by, members of our own organization, working collectively for their mutual benefit." He insisted that this joint building program was "in keeping with the free enterprise system," and suggested that "the extent of growth of the tendency for consumer groups collectively to develop their own living accommodations will in large measure be determined by how successfully the home building industry solves the problem, especially as it pertains to the middle and lower income groups."

There is a wide divergence of opinion as to the probable volume of

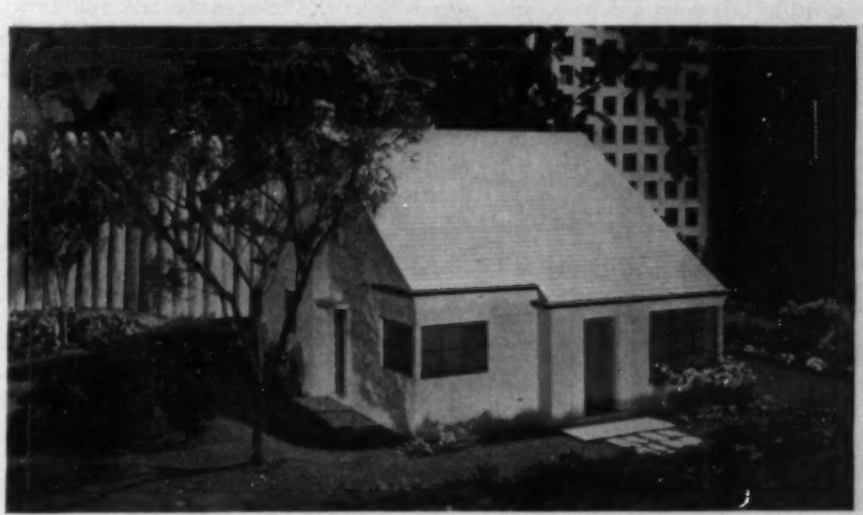




This imposing design, with separate wing for the "hired men," won first prize in the "Farm Home" class for Charles Nixon, Glenview, Ill.; Carl A. Kastrup, architect



"Industrial Worker's Home" class first prize went to E. C. Mahoney, Chicago; by Braun and Del Bianco, architects



housing production after the war. The C.I.O. "minimum" goal of 1,750,000 family units annually and the A.F. of L. estimate of 1,500,000 houses a year, are in contrast to the estimate of the builders of a need for about 1,000,000 a year.

Douglas Whitlock, president of the Producers Council, told the association that "only time will tell" whether it is possible to put up 5,000,000 dwellings in the first six years of peace. Costs will be one of the determining factors, and the average postwar house probably will involve an outlay 30 per cent higher than for the same home in 1940, in Mr. Whitlock's opinion.

Prospective liberalization of mortgage regulations may enable even the so-called low-priced house to offer certain improvements and conveniences which either were not heretofore available or were found only in costly residences.

From point of view of exterior appearance, there seems to be little ground for believing that home buyers of the future will accept marked departures. With consumer surveys indicating a continued preference for traditional designs, advances may be expected to come rather in layouts of rooms, wiring and other invisible details in accordance with modern developments in science.

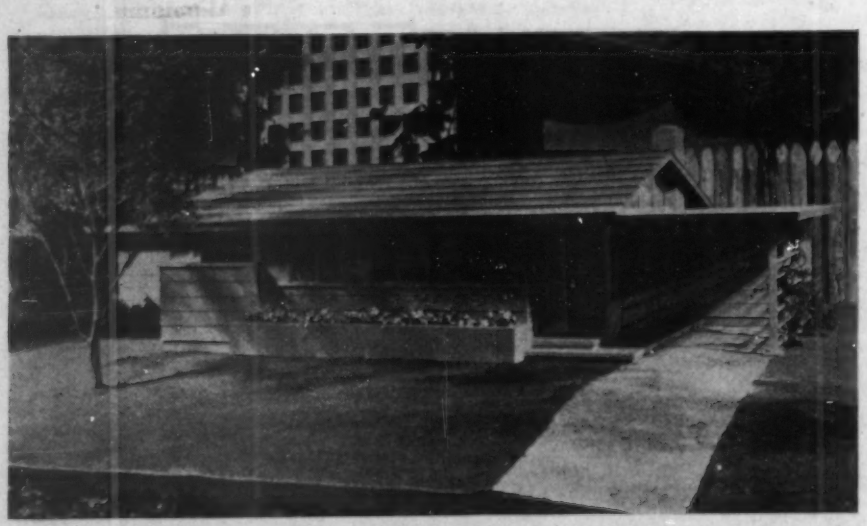
Although the trend in modern apartments and in the design of compact emergency war houses has been away from separate dining rooms, the builders and surveys agree that the majority of potential home owners, and particularly the wives (who *sometimes* have the final word in such matters) will want such rooms. Many, however, who now express this preference may be content with dining alcoves as adjuncts to the kitchen when they come down to figuring square-foot costs.

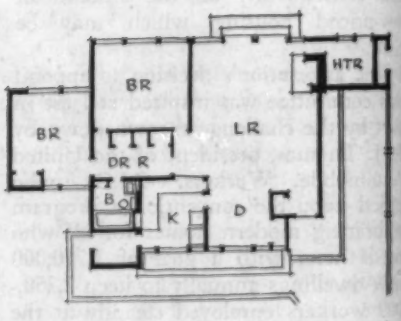
The builders generally are talking but casually of factory-built homes, but hope for many manufacturing and site-prefabrication economies to cut costs even in residences of individual design.

There was little in the prize-winning home designs at the exposition to offer a clue to future trends. A corner window, occasional use of fluorescent lighting or of a folding wall or accordion-type partition were about the only interior concessions to postwar "advances."

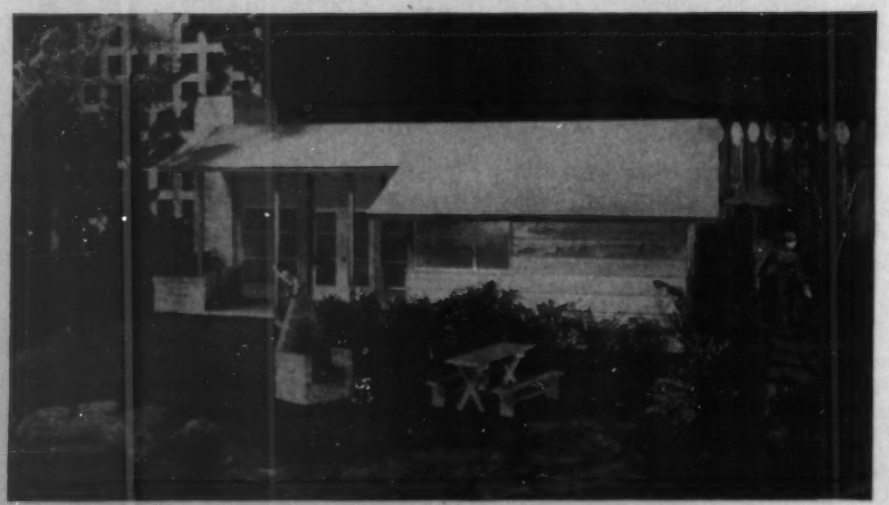
Whether the returning veteran will find the GI Home for Two the ideal house of which he has been dreaming, or whether many farmers ever will anticipate owning an imposing residence like that which won first award in the farmhouse class, are moot questions which the competition left in the minds of the conferees.

With the admonition of Arthur Motley, of the Committee for Economic Development, to the effect that the builders and designers must modernize their merchandising methods and strive to give the public what it wants in a home instead of what they want to give the public, the leaders in the industry have returned to their homes to prepare in advance for the day the full force of their efforts may be turned to filling civilian demands. They have been impressed with the idea that they must bring housing up to the technical level attained in the construction of super-bombers and of automobiles, and with the belief that eventually they may duplicate some of the mass efficiency of the ship-builders.





"G. I. Joe Home" first prize winner; by Todd, Tibbals and Associates, Columbus, Ohio; Noverre Musson was the architect



First prize winner in the "Summer Resort Home" class, by Earl Carrothers, of Chicago; Braun and Del Bianco, architects

How Good Is A House?

✦ To make real progress we should know two things—what makes a house good and what makes a good house. There is a difference: the one stresses the desired end; the other, the means to that end. Comprehensive information and anything like scientifically-established standards of judgment are generally lacking. That there is need for basic research in the building field, particularly in housing, is beyond question. Conflicting interests and opinion make objective research difficult. With changing ways of living and with the accelerated development of improved and new products, the task becomes daily more complicated. And architects, engineers and community planners need more than ever all possible facts and criteria both for designing and for judging their works.

✦ "What makes a house good" involves the functions of the house, and all its social, economic, political, and even military aspects. Population distribution, density and mobility are involved; city, town, neighborhood and site planning; regional living habits, climatic conditions, income levels, transportation, and hosts of other factors require intensive and coordinated study. And "what makes a good house" implies research into production processes, into materials, equipment and techniques, into planning and design standards. Research is needed to establish criteria for space, light, air, comfort, convenience, sanitation, safety—all related to the economics of operation and maintenance, as well as first cost and financing. It's a big order! Our present knowledge is largely "bits and parts" information, incomplete and uncoordinated, emanating from all sorts of sources, more or less reliable.

✦ The one agency which presumably has an entirely "disinterested" interest in housing, and purposes related only to the common good—the welfare of all citizens and the best uses for all our resources—is our government. Basic housing research would therefore be the logical function of government. The Wagner-Kilgore Bill (S. 2046), soon to be considered by the new Congress, has as one of its purposes the initiation and the coordination of research into both what makes a house good and what makes a good house. Widely disseminated, the results of research would be a boon to designers, producers, builders and public. Such research would embrace fact-finding, testing, analysis, and the establishment of standards and criteria as a basis for judgment and for future progress.

✦ Whether such basic research should be undertaken by an emergency agency of government such as the National Housing Agency or should be part of a permanent government department is a moot question. It would seem desirable to have similar research in the whole field of building if it is considered of value in housing which is but a part of that industry.

✦ There are other provisions of the Wagner-Kilgore Bill which cover certain creative or inventive aspects of housing research and which set up a patent procedure related thereto. The relative functions of government and of private enterprise in the production and control of *inventions* is an issue involved in this Bill. There are far-reaching economic and political implications in the establishment of a government agency to be actively engaged in *invention*, and in administering a patent-licensing and royalty-collection system. Discoveries or inventions arising from government-sponsored research can be, and have been, dedicated to the public by publication. While it is highly desirable that all improvements in housing "be passed on immediately to the consumer," the procedure for so doing must be established clearly and in detail. A bill as basic and as far reaching as this needs the most careful consideration and a searching analysis of its potentialities, purposes, and procedures to determine which parts are desirable and which should be changed.

Kenneth K. Stowell

EDITOR

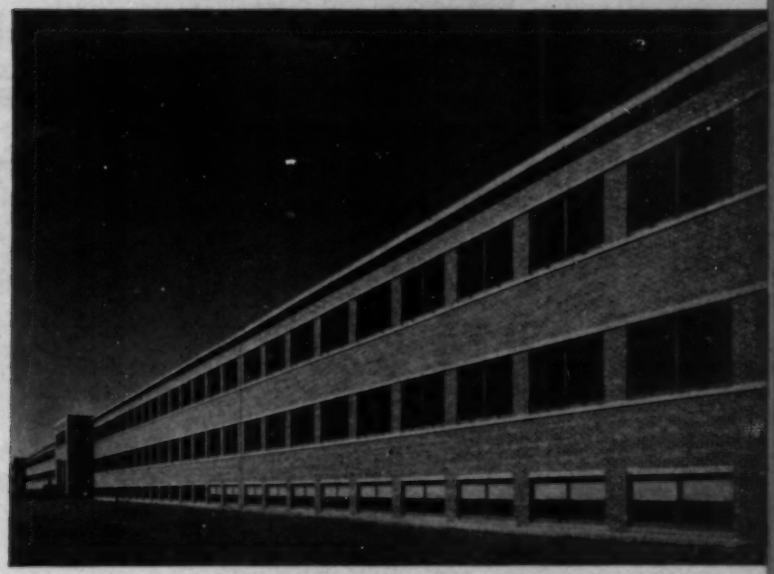
FAST CONSTRUCTION FOR FAST PRODUCTION

ASSEMBLY line methods, familiar and favorite American production idea, were carried to new extremes in the construction of this airplane engine plant. Architects and engineers have learned to grind out plans by the ton for factories in which all manner of war materials were turned out on assembly lines; here, contractors and architects collaborated on a straight-line construction system. This procedure permitted the pouring of 200,000 sq. ft. of roof area each week, and rapidly produced a main manufacturing building more than 1,000 ft. wide and over twice as long.

This structure represents one of the largest integrated projects in the war construction program, being virtually under one roof, with even the test cells incorporated in the dominating central building.

Operational requirements necessitated spacing the columns at 40-ft. intervals each way. Restrictions on the use of critical materials made reinforced concrete construction practically mandatory. The use of reinforcing materials had to be held to a minimum. Of course there had to be a roof over the vast structure, and that, too, had to be of

Hedrich-Blessing photos



Below: receiving room end of the main manufacturing building

Aircraft Engine Plant, Kansas City, for Pratt & Whitney Division, United Aircraft Corporation.
Albert Kahn Associated Architects and Engineers, Inc.
Long-Turner Construction Co., General Contractors

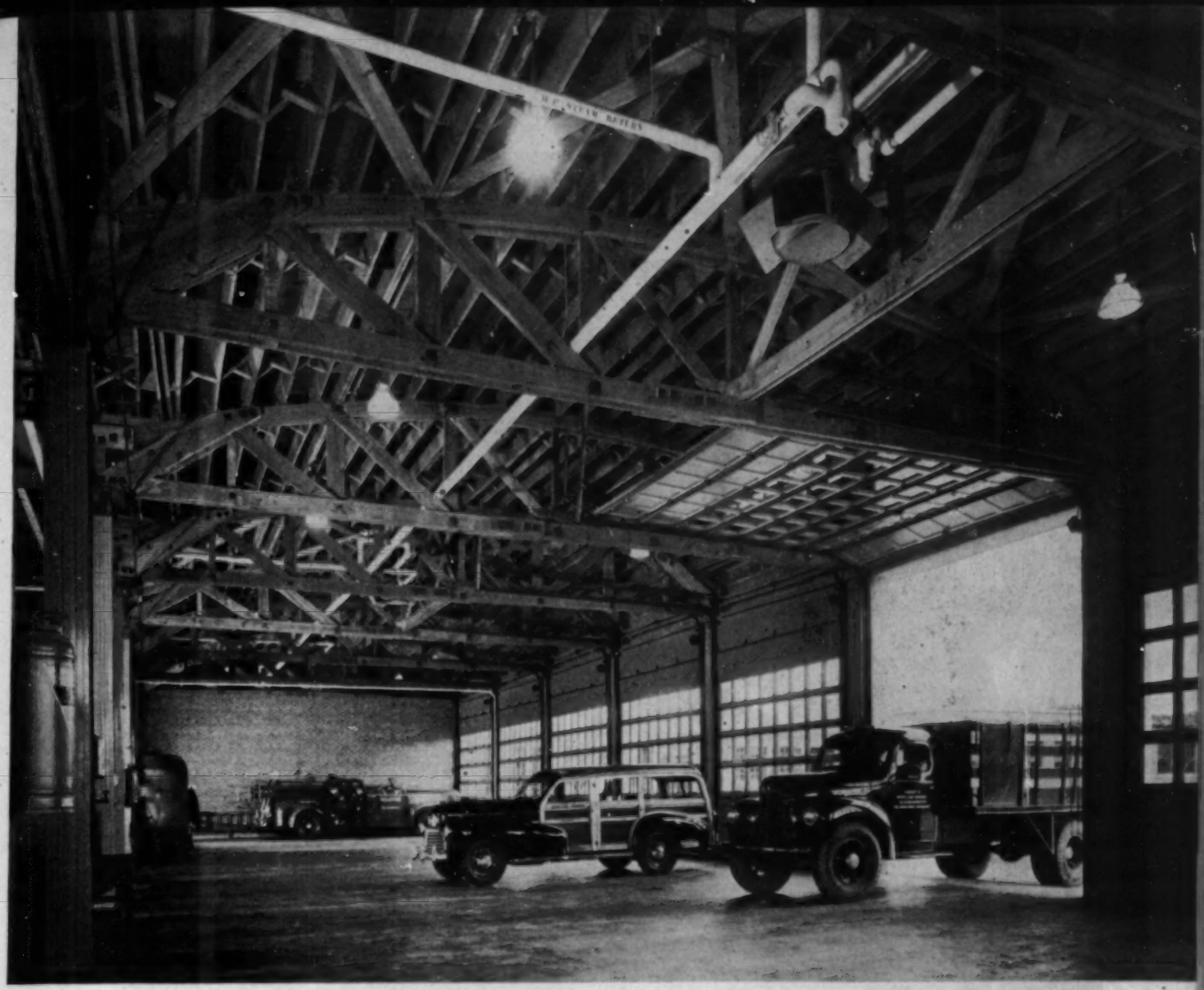
Below: wide basement corridors provide access for employees

reinforced concrete. And putting a reinforced concrete roof over 40 by 40-ft. bays was by no means ordinary construction.

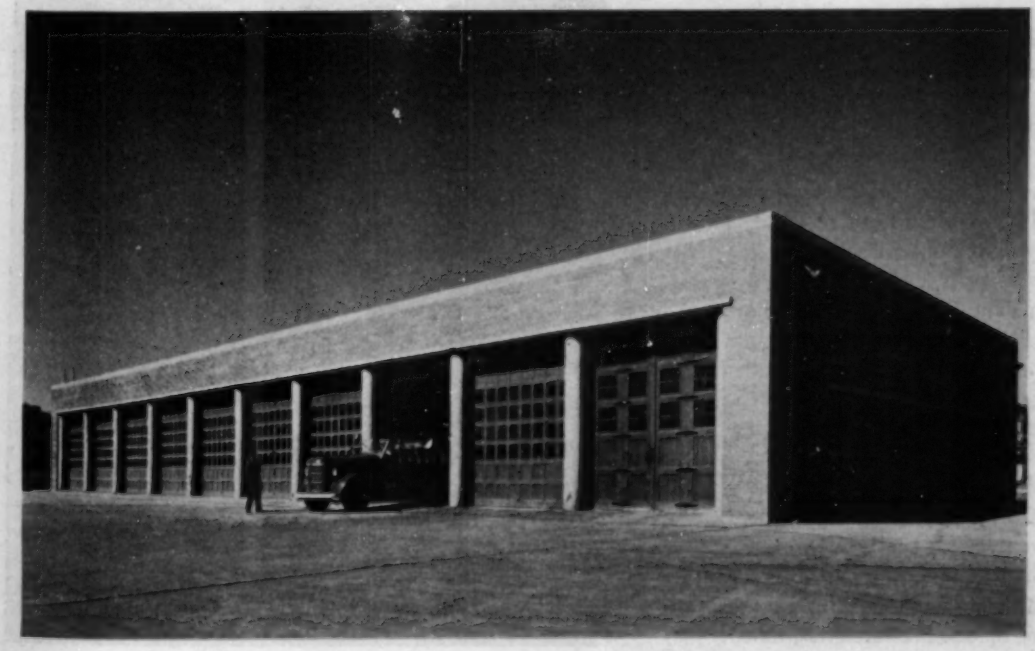
The Kahn organization designed a multiple-arch, thin-slab concrete roof which required only 3.1 lb. of reinforcing steel per sq. ft. of floor area, in spite of the long spans to be covered. The head clearance in part of the building is 20 ft. to bottom of girders; in another it is 26 ft. Each 40-ft. length of arch roof is divided into three panels by reinforced concrete ribs spaced 13 ft. 4 in. apart on centers. The arch slabs are 3 in. thick and have a rise of 4 ft. 10 in. where the head clearance is 20 ft.; they are 3½ in. thick and have a rise of 7 ft. over the 26-ft. clearance. They are reinforced by one layer of woven wire mesh. Ribs are reinforced by two 1¼ in. square steel rods. Slabs and ribs frame into girders 20 in. wide and 33 in. deep. Columns are 20 in. square. The concrete footings were spread to accommodate soil conditions.

The mass construction line consisted of a series of mobile forms, each 80 ft. long, standing side by side for a distance of 1,000 ft. (See ARCHITECTURAL RECORD, Dec., 1942, pp. 52-4). On the preliminary mass assembly, 25 forms were used, and all of them were used for 19 pourings. Thereafter, they were torn down and the lumber used in further construction. Each form was mounted on wheels which operated on rails. Every seven days, the forms were jacked in place, a section of roof was poured, together with the supporting columns, the concrete set, the jacks were lowered, and the forms moved forward for the next pouring. Cold weather set in, but the work went on. A framework of tubular scaffolding was erected over the forms, mounted on wheels like the forms themselves, and covered with canvas. With this protection over the top of the slab, heat produced by salamanders on the floor below was directed into the confined framework over the roof arch, and kept the concrete warm until the hardening process was completed.

Lumber from the forms was used for trusses



The truck garage building was built with lumber from the huge movable forms used for concrete work in the main manufacturing building. Here columns, roof trusses and roof itself are of wood, most of it taken from the concrete forms

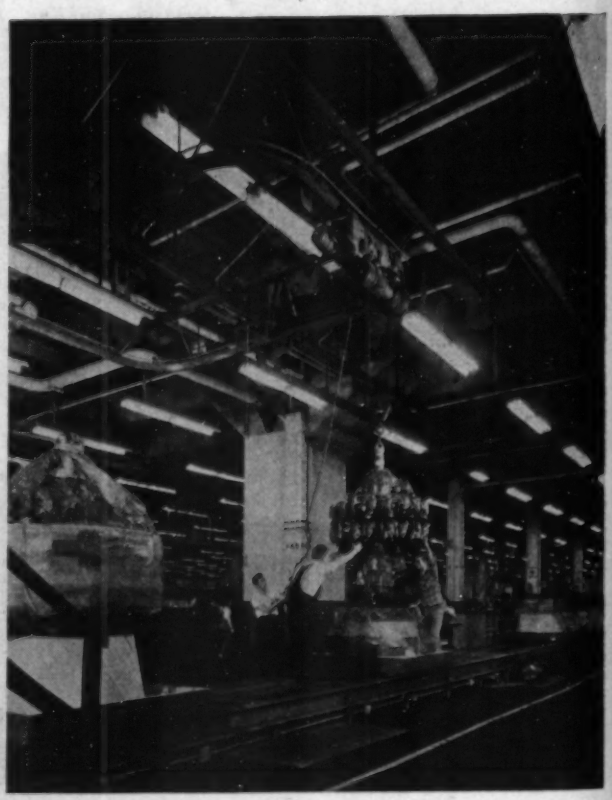


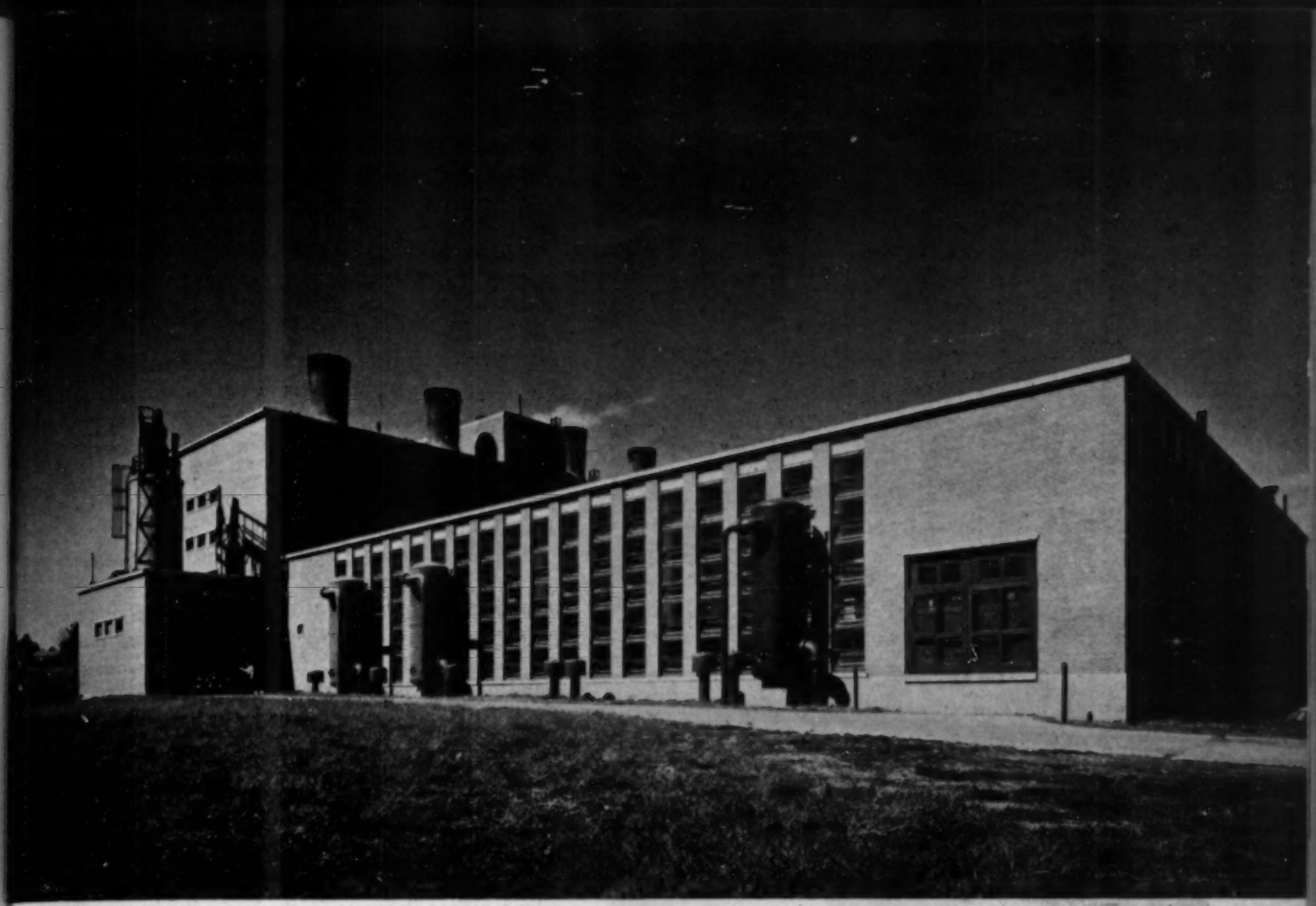
Interior view in manufacturing building. Completed aircraft engines are handled by a monorail system, to test cells, then to the tear-down and re-assembly building. Below: being wrapped for shipment

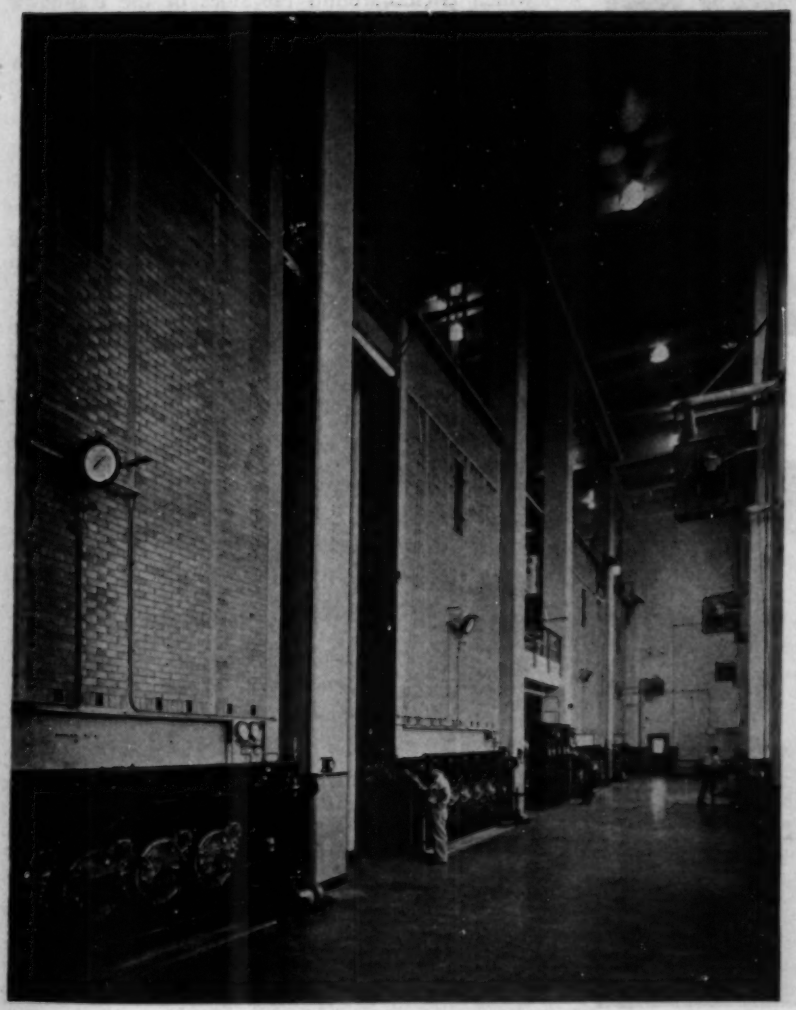
for a truck garage, with brick walls, wood columns, and wood and composition roof (photo page 69). Other such timbers were used wherever possible in other buildings, with the result that most of the wood used in the original forms was put to permanent use in other structures. The truck garage has double-hung wood sash and overhead doors.

Provision for the effect of temperature changes was made by cutting the main building by two longitudinal expansion joints and three transverse ones. All are composed of wood and concrete curbs and two layers of 3-ply, white-top asbestos roofing. The vertical joint consists of a V-shaped assembly of similar construction. The apex of the "V" has a metal binder. The reinforced concrete roof is, of course, covered with composition roofing. Walls are brick to a height of 7 ft. 6 in., above which are Victory sash between the columns, varying in height from 12 to 16 ft. Floors are concrete, covered with 2-in. creosoted wood blocks.

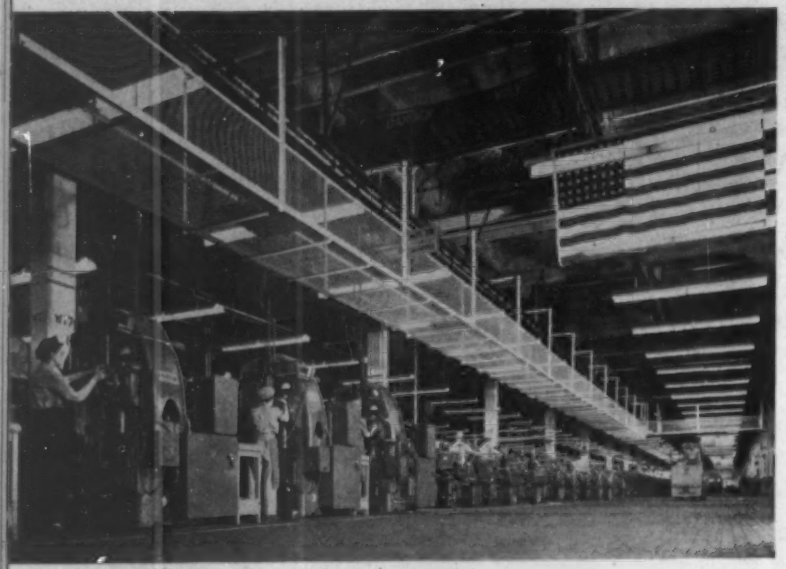
The main building is of one-story and part-basement construction except for two sections, each two stories. One of the latter, at the east end, is for storage and a materials laboratory; the other, on the south side, is for offices. Six cafeterias, toilet

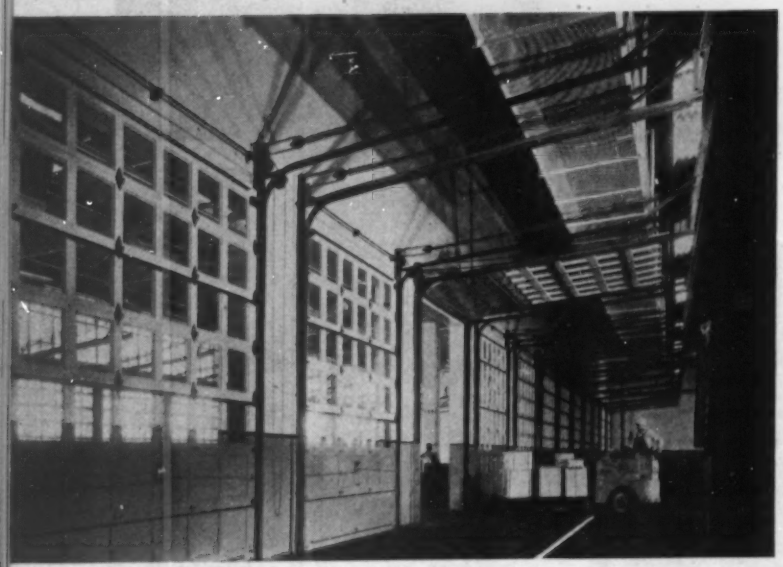


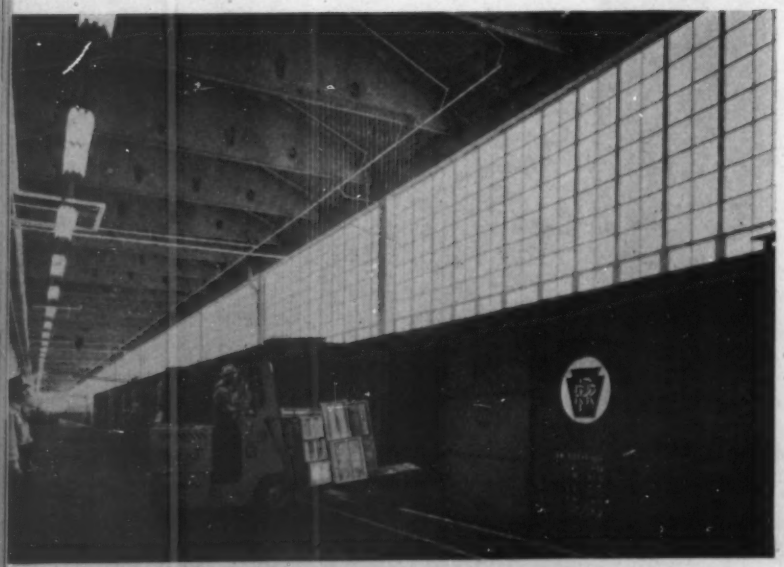




Four huge boilers, each with a capacity of 100,000 lb. of steam per hour, supply steam at 175 psi. Boilers are oil-fired, can burn refuse oil if required; two are also connected to rubbish incinerators







rooms, locker rooms, first-aid rooms, and employee entrances are in the basement areas. In addition, there are nine toilet rooms on the ground floor level in areas considerably removed from the basement corridors.

Employees enter through one longitudinal corridor and two transverse ones in the basement. All corridors are 19 ft. 6 in. wide. Stairways at frequent intervals lead from basement corridors to working areas on the ground floor level.

Parking facilities have been made for approximately 14,000 motor cars. This was possible because of the rural nature of the site.

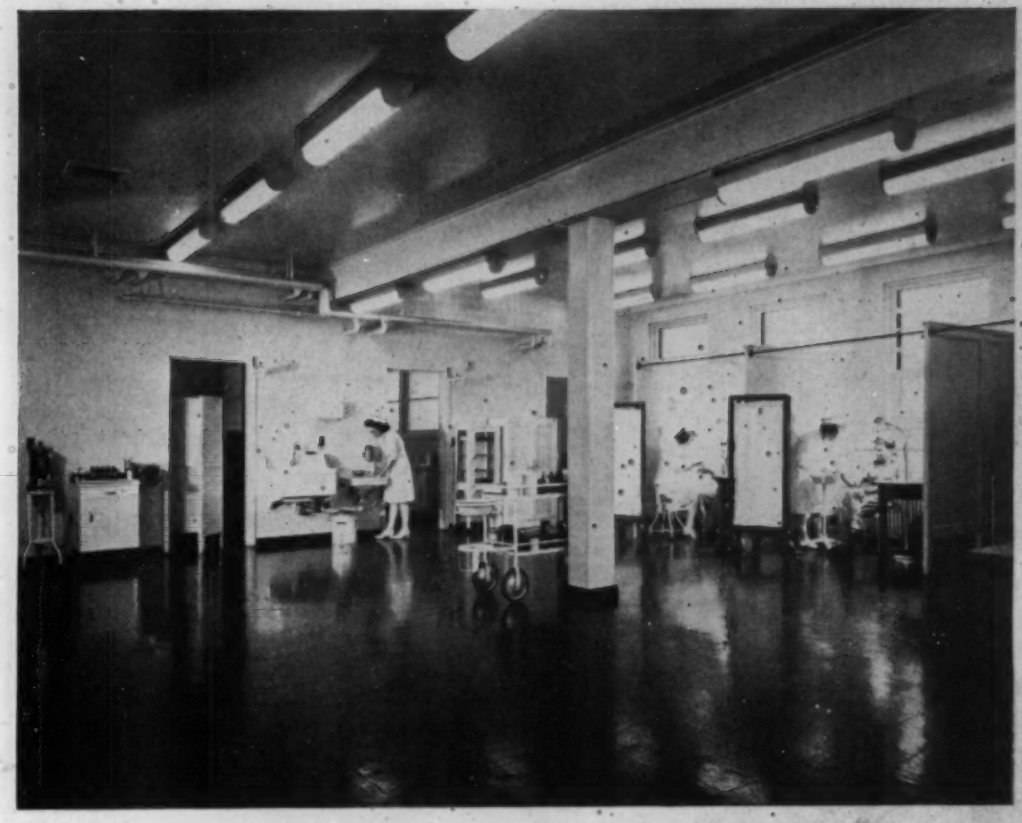
Extending north from the northeast corner of the main building is a series of 32 production test cells. These are of concrete construction. There is a 48-ft. aisle between the two banks of cells. The intake and exhaust stacks on test cells are equipped with movable covers. In addition, there are three dynamometer test cells, with provision for a fourth, and four special 24-ft. test cells. The latter are of the horizontal, straight-through type, with exhaust at the end instead of above the roof. Wood baffles on the end of exhaust lines deflect gases upwards.

Adjoining the test cells on the north is the "tear-down and re-assembly building," which is the same type of construction as that of the main building. Completed aircraft engines are handled by a monorail system in the test cells; leaving the test cell building they go onto a chain conveyor which circles around the sides of the tear-down and re-assembly building.

There is no separate administration building, as the offices are housed in one of the two-story sections of the main building.

The personnel building, located at the southwest corner of the manufacturing and assembly building, is a one-story brick structure, with cinder block backup and continuous concrete lintels. The roof is wood and composition roofing; floors are composition tile; columns are 8 by 8 timbers; beams and sash are wood, and partitions are wood

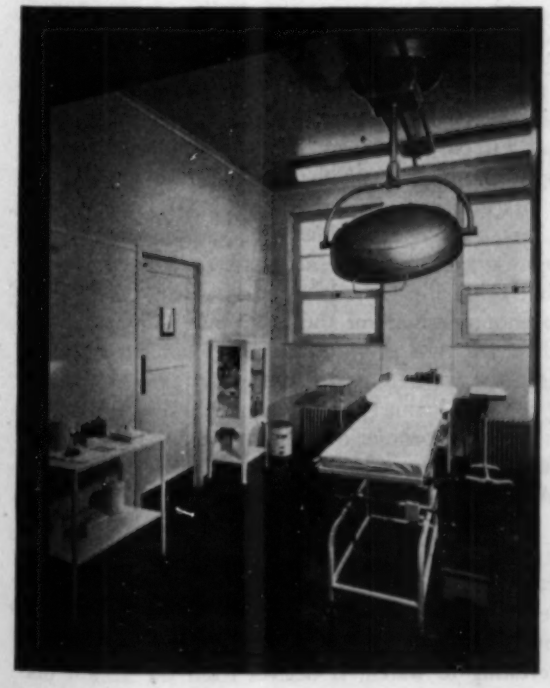
Top: a row of grinding machines that disappears in the distance gives some idea of size of this plant. Center: overhead garage doors instead of partitions give flexibility at the shipping end of the plant. Bottom: with a whole string of freight cars coming inside, shipping operations proceed at top speed



Medical department has complete facilities for first aid and for full examinations

and wood and glass. Toilet rooms and sterile rooms have walls of glazed tile. There is a small basement area for mechanical equipment.

The boiler house, at the northwest corner of the main building, is constructed of concrete and brick, with cinder block interior, and with vertical sash 34 ft. high in the boiler room and horizontal sash in the compressor room. The two rooms are separated by a cinder block wall. Smokestacks are reinforced gunite and are of the stub type, being 17 ft. high above roof level, 5 ft. 6 in. in diameter at the base, and 7 ft. 6 in. at the top. Steam is furnished to the factory for space heating and process at pressures of 175 psi, 120 psi, and 30 psi, depending upon heat balance.



The refrigerating machines for the air conditioning system have a combined refrigerating capacity of 7,325 tons. When it is remembered that 1/10 ton of refrigerating effect takes care of domestic refrigeration, while half a ton cools the butcher's big walk-in meat cooler, one realizes that the 7,325 tons installed in the Kansas City plant is truly colossal. This huge installation was made necessary by the high summer temperature in this location and by the close tolerances required in airplane engine manufacture.

By the time this plant was constructed, though, new refrigeration machinery was no longer available, hence it became necessary to remove the required machines from non-defense sources such as department stores and even from office buildings in the nation's capitol for installation here. Now thousands of occupants of buildings which formerly were air conditioned swelter in order that war production may be carried on more efficiently in Kansas City.

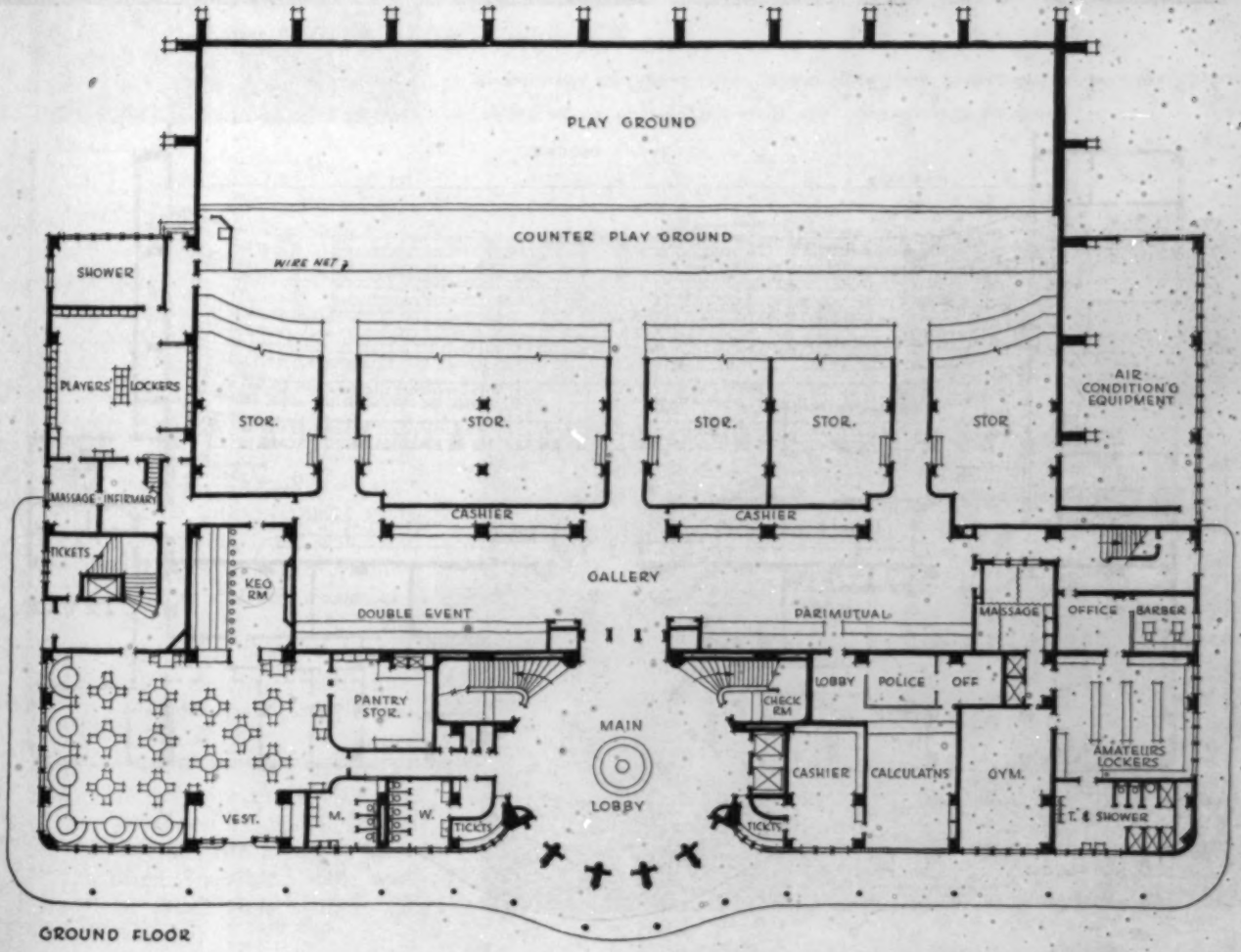
JAI ALAI SPORTS CENTER IN MANILA

Walter Wurdeman and Welton Becket, Architects

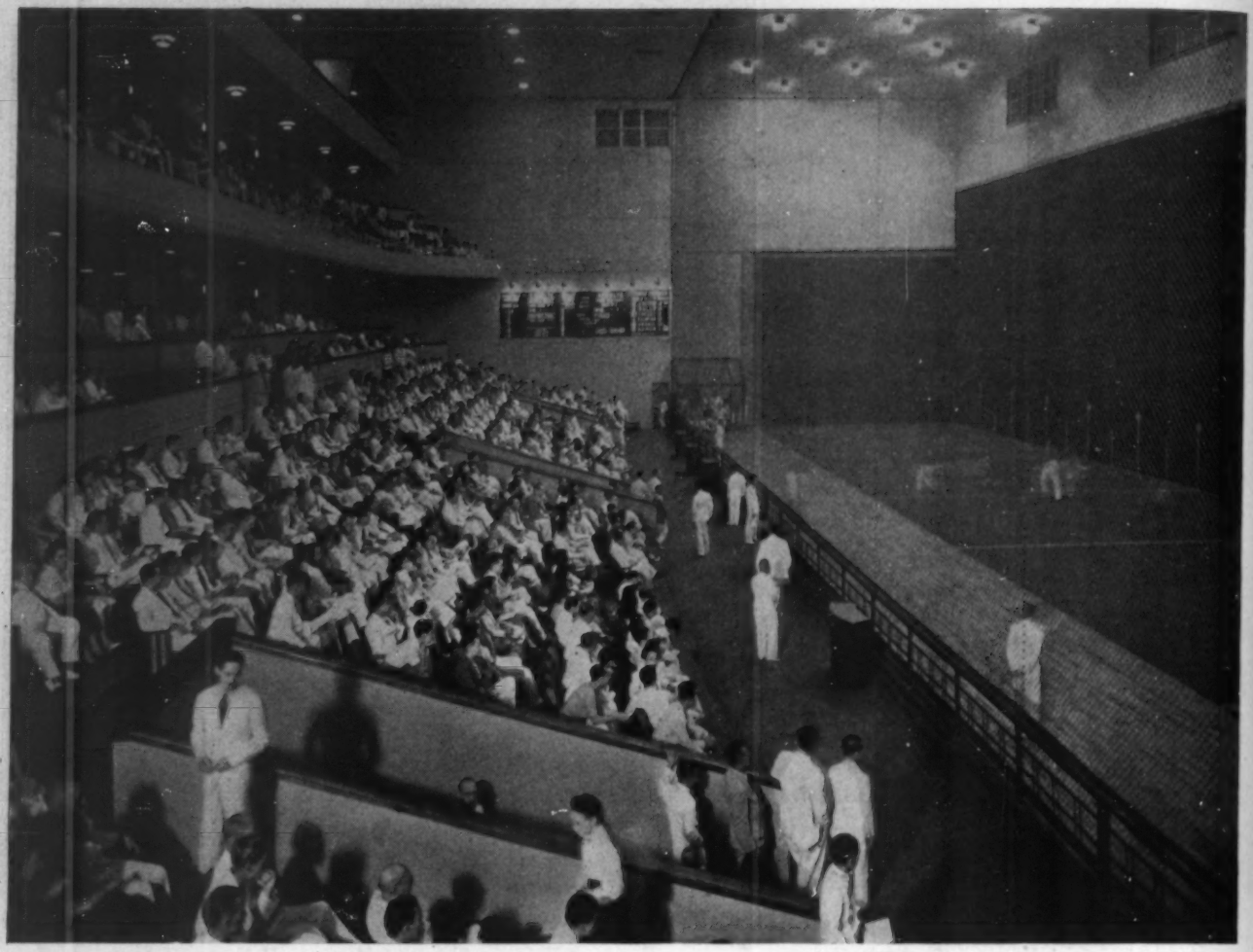
With General MacArthur's men again in the Philippines and, as this is written, making rapid strides down Luzon, Manila can see the end of the darkness, despite the destruction that may still be wrought on the city and its buildings. Before Pearl Harbor Manila was busy with a thoroughly American building program; indeed the architects for this Jai Alai sports center originally went to Manila to work on a slum clearance program for the Philippine Government.

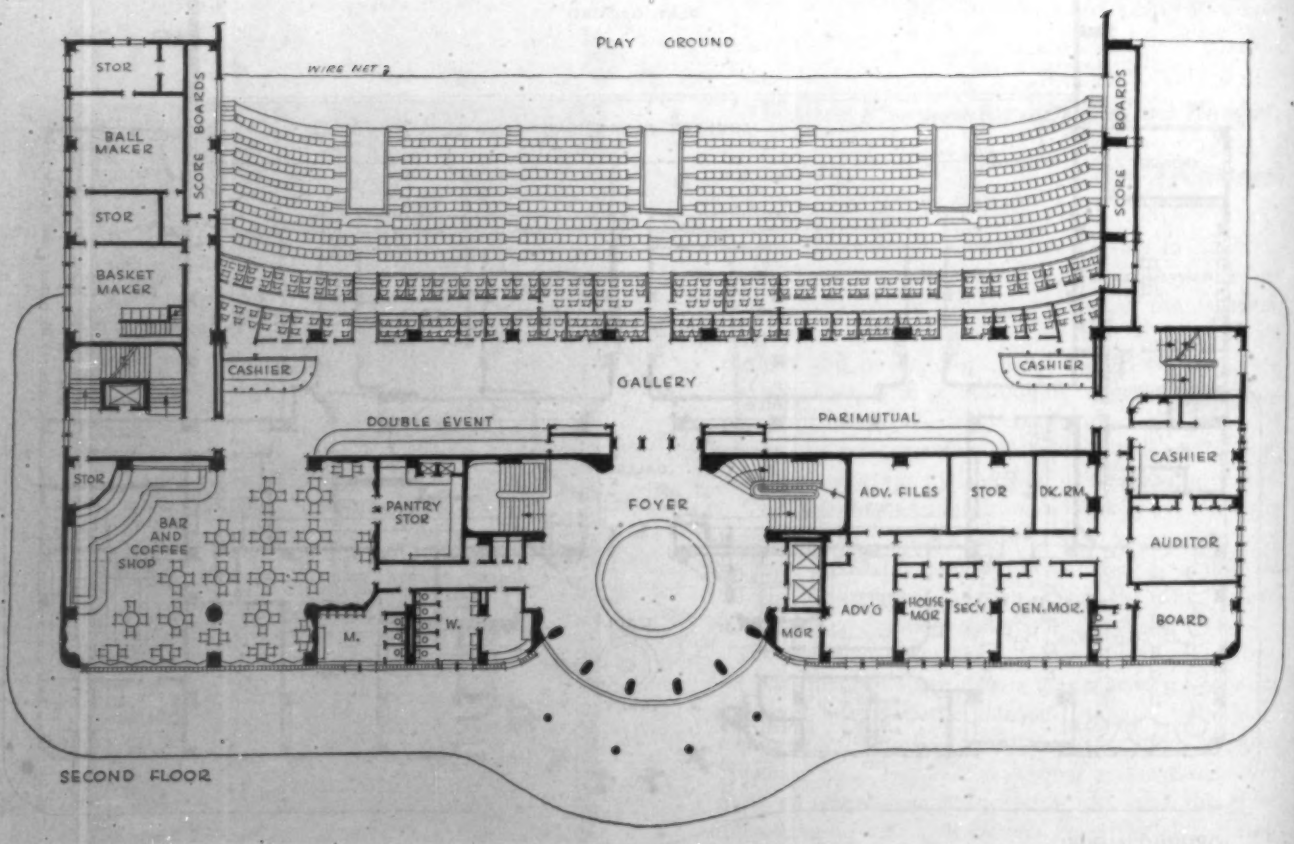
The Jai Alai Auditorium was completed shortly before the war, enjoyed a brief span as a bright spot for a sports-loving people, then served as a hospital during the Japanese invasion. What has happened to it since is a question still to be answered.

As the plans for this building eloquently testify, Jai Alai involves more than a game, however exciting the sport itself. In the Basque language, "Jai Alai" means "merry festival," and the game itself is called "Pelota Vasca." Jai Alai is known as the fastest and most dangerous game in the world, also the most interesting to watch. It derives from the almost uni-

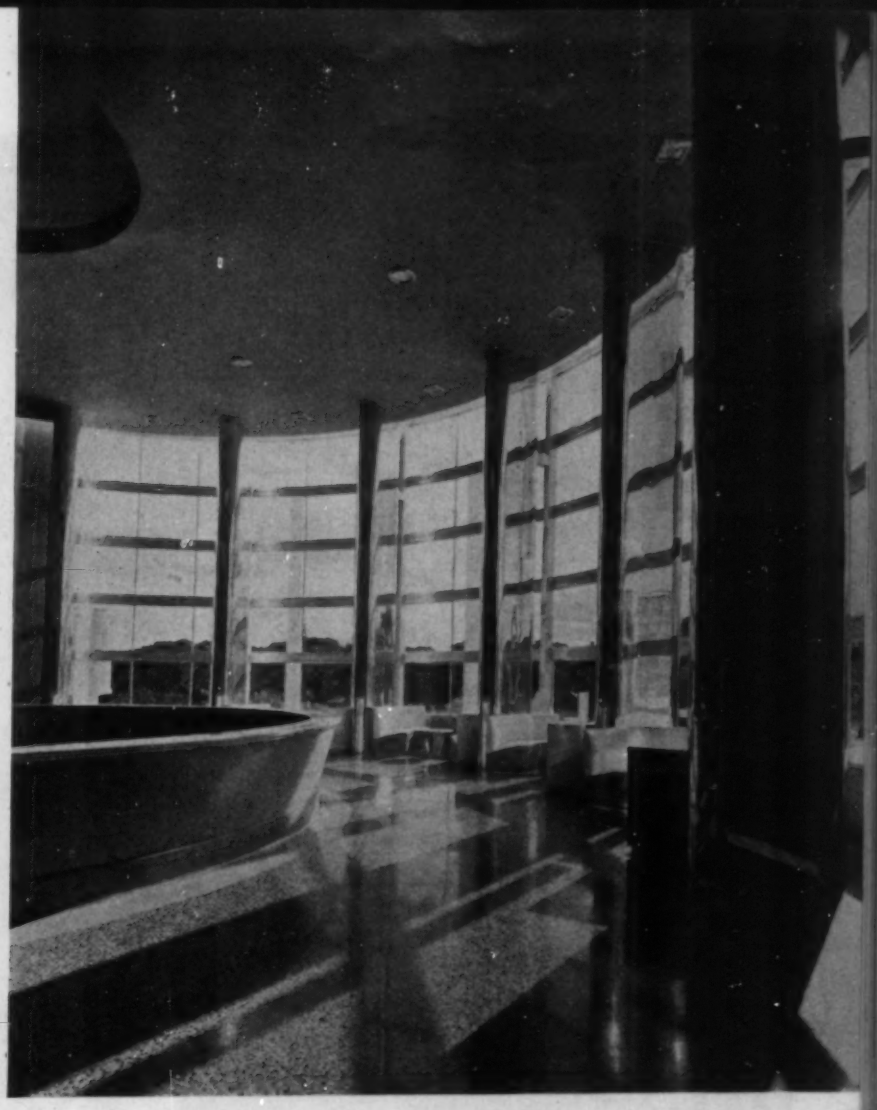


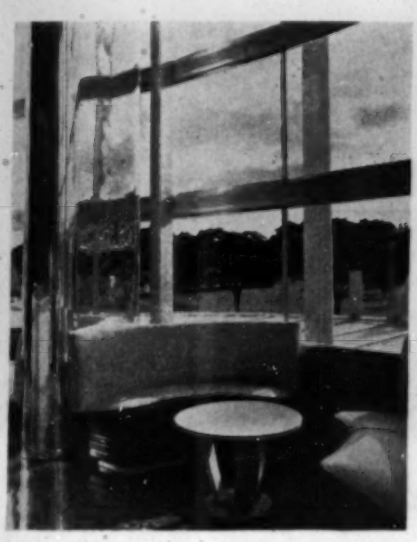
GROUND FLOOR




PLAY GROUND
WIRE NET
STOR
BALL MAKER
STOR
BASKET MAKER
SCORE BOARDS
CASHIER
GALLERY
BOARDS
SCORE
CASHIER
DOUBLE EVENT
PARIMUTUAL
STOR
BAR AND COFFEE SHOP
PANTRY STOR
FOYER
ADV. FILES
STOR
DK. RM.
CASHIER
AUDITOR
M.
W.
MGR
ADV'G
HOUSE MGR
SEC'Y
GEN. MGR.
BOARD
SECOND FLOOR

Central motif both inside and out is the cylindrical center section, 60 ft. in diameter and 80 ft. high. Here is the interior at the second floor; columns are encased in highly polished metal

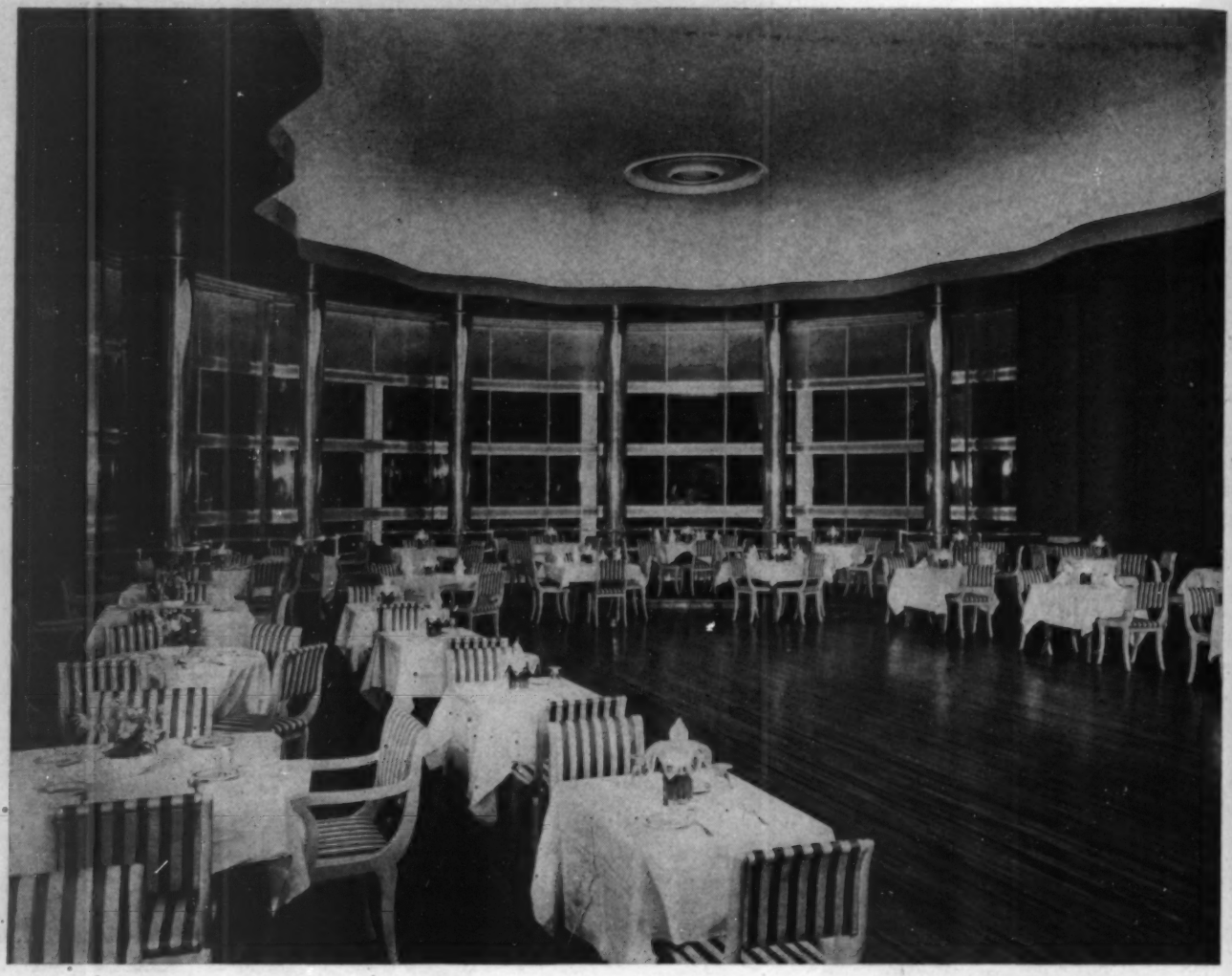




Below: bar and coffee shop, second floor level, convenient to betting counters, offers solace or celebration as the occasion may demand

versal game of handball, and in its modern form is a major sport in many countries, and in some localities in the United States. The ball, or "Pelota," is about the size of a baseball and "twice as resilient" as a golf ball. The court measures 180 by 30 ft., with thick concrete walls and floor, the speed of the game depending in large measure on the construction of walls. In this building the front wall is of 12-in. granite blocks quarried in China.

Jai Alai dates far back into antiquity, many records being available showing that it was played in ancient Egypt, Greece, and medieval Europe, also in the new world, the Aztecs having had a similar game. Courts have been found in many of the old Aztec ruins. The modern sport seems to have developed in Spain. It was originally played with the bare hand, the ball bounced against a stone wall, usually the village church. Later the

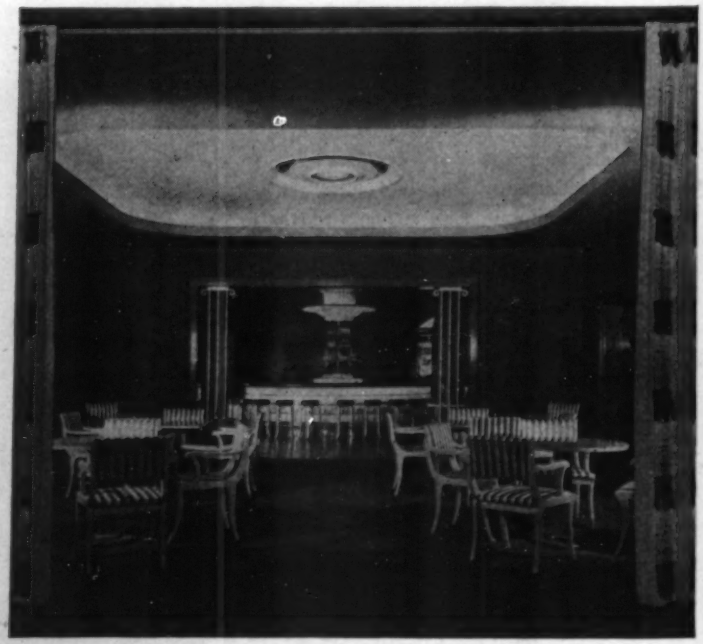


hand was gloved or armed with a short flat bat. Thus did the modern game develop, until now it has highly skilled professionals, with pari-mutual betting.

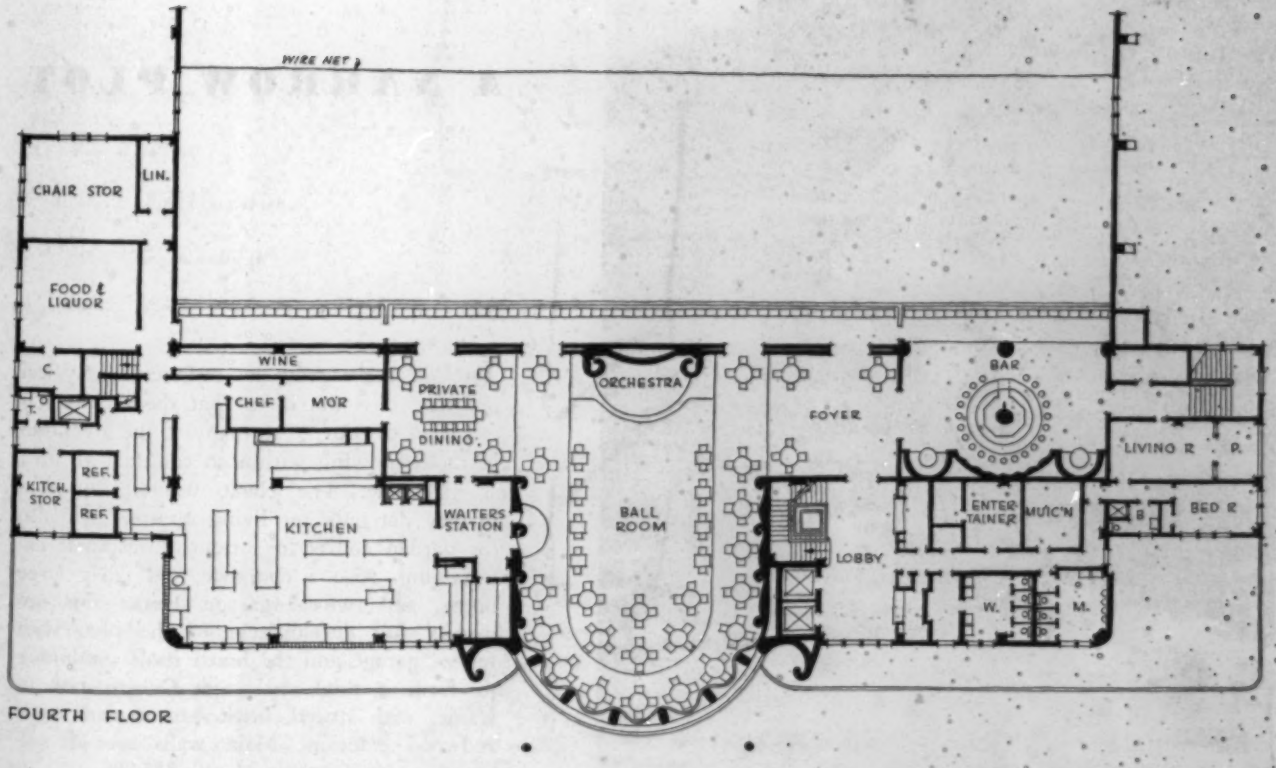
The auditorium in Manila is located among the state buildings on Taft Avenue. With seats for 3,500 spectators, it also has five bars, two restaurants and a night club. While there are bars on each of the four levels, the whole top floor is developed for a combination night club and gallery, where patrons may view the game in progress some 65 ft. below them.

The entire building is air conditioned, the plant designed to reduce temperatures from 100 to 74 degrees, humidity from 100 to 54 per cent. It is said to be the largest air conditioning plant in a tropical location. The building also has its own generating plant, with a 1500 h.p. Diesel engine.

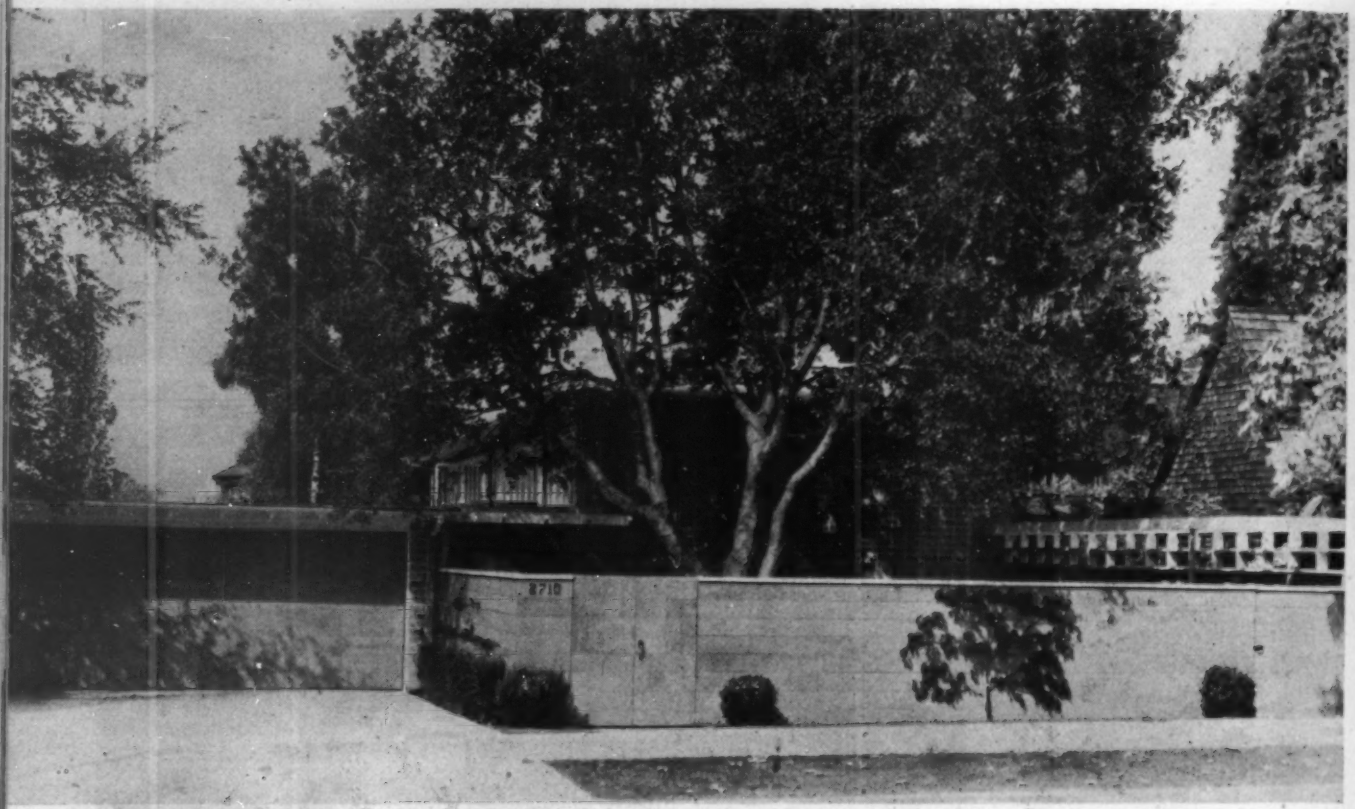
Construction was something of a problem, for modern methods are not a natural concomitant of the eastern pace. Such a building would normally take about three years to build, with the nine months rains helping not at all. But with some hurrying by 2,000 men in shifts working around the clock, this building was completed in seven months.

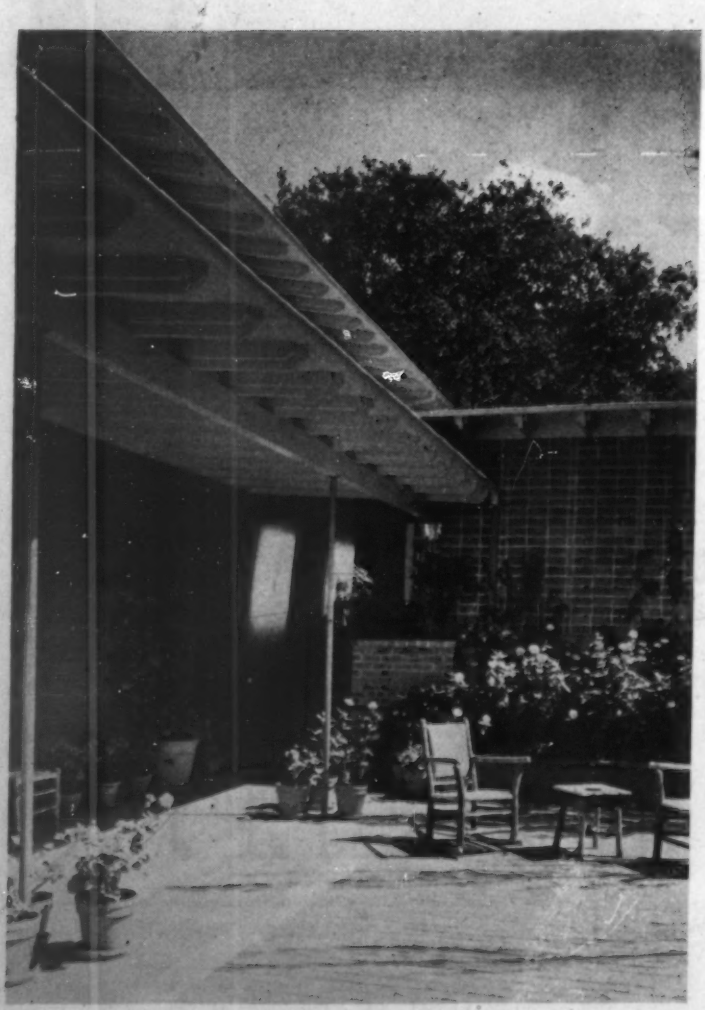


Ballroom of the Jai Alai auditorium speaks dramatically about life in Manila before the Japs brought their "help" to the Philippines. Above, ballroom foyer and, opposite page, adjoining Sky Room Bar



FOURTH FLOOR

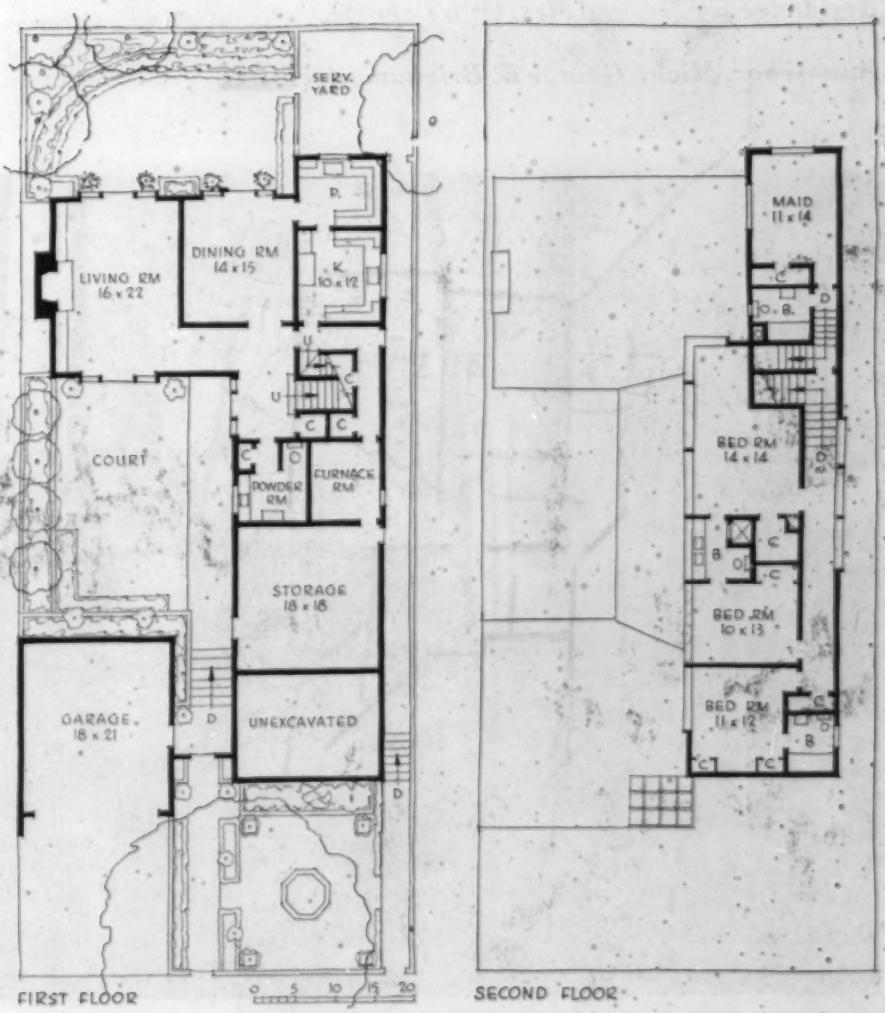




FOR PRIVACY ON A NARROW PLOT

THOUGH the narrow lot represents a typical problem, it is not often that the architect is called on to provide so many of the amenities of modern living within so confined an area as this one. The client wanted complete privacy not only for living quarters but also for garden courts for extensive informal entertaining. Also a complete and fairly large house, and two-car garage. Hence this unusually full development of the plot, with fences, garage and the house itself combining to form a total enclosure. Construction is frame, with stucco, brick veneer and rustic redwood exteriors. Main walls are of redwood, painted mauve. Cost, $15,000.

Residence for
Mrs. E. Telfer
Berkeley, California
Frederick L. Confer
Architect

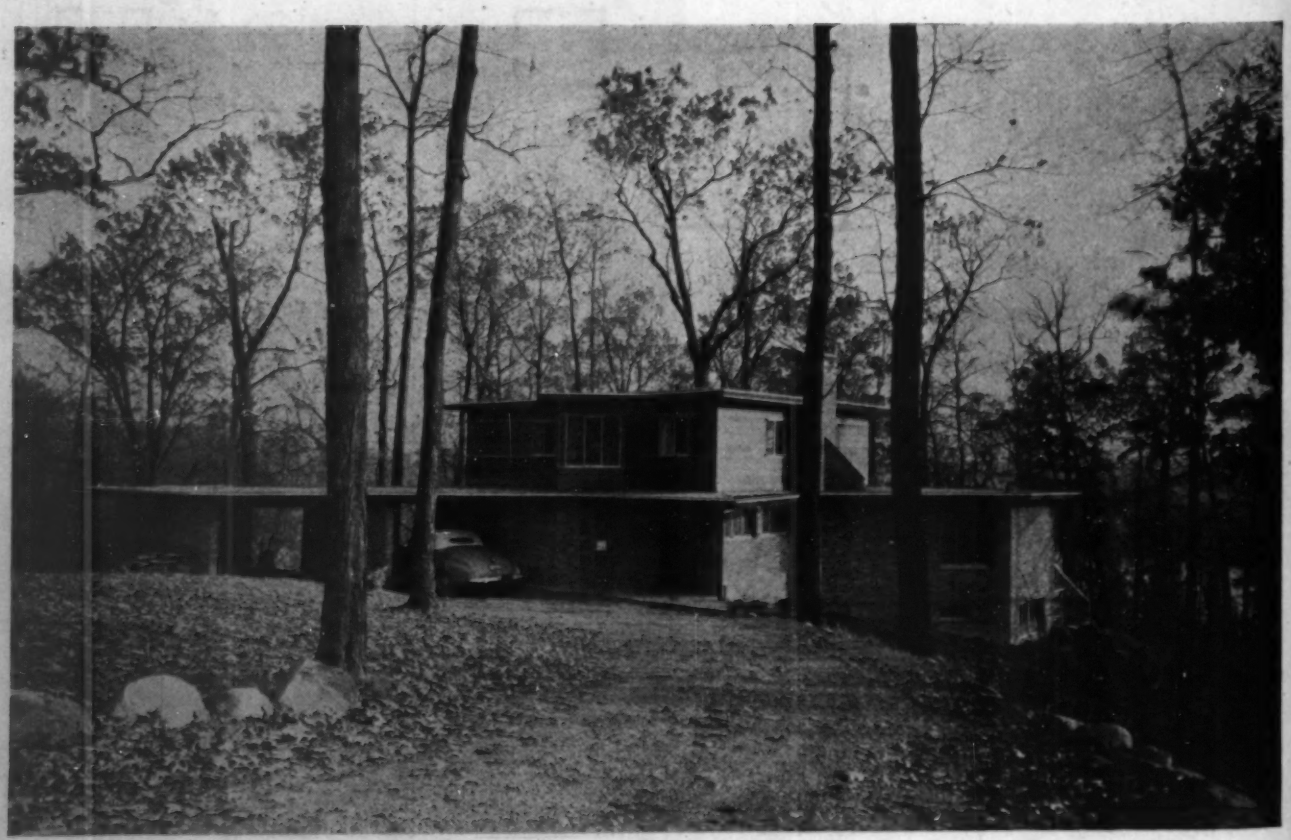


Especially designed for extensive entertaining, both formal and informal, the living room has its own wing, between two enclosed gardens. Bedrooms are oriented for maximum sunlight (south is to the left); for privacy on other side

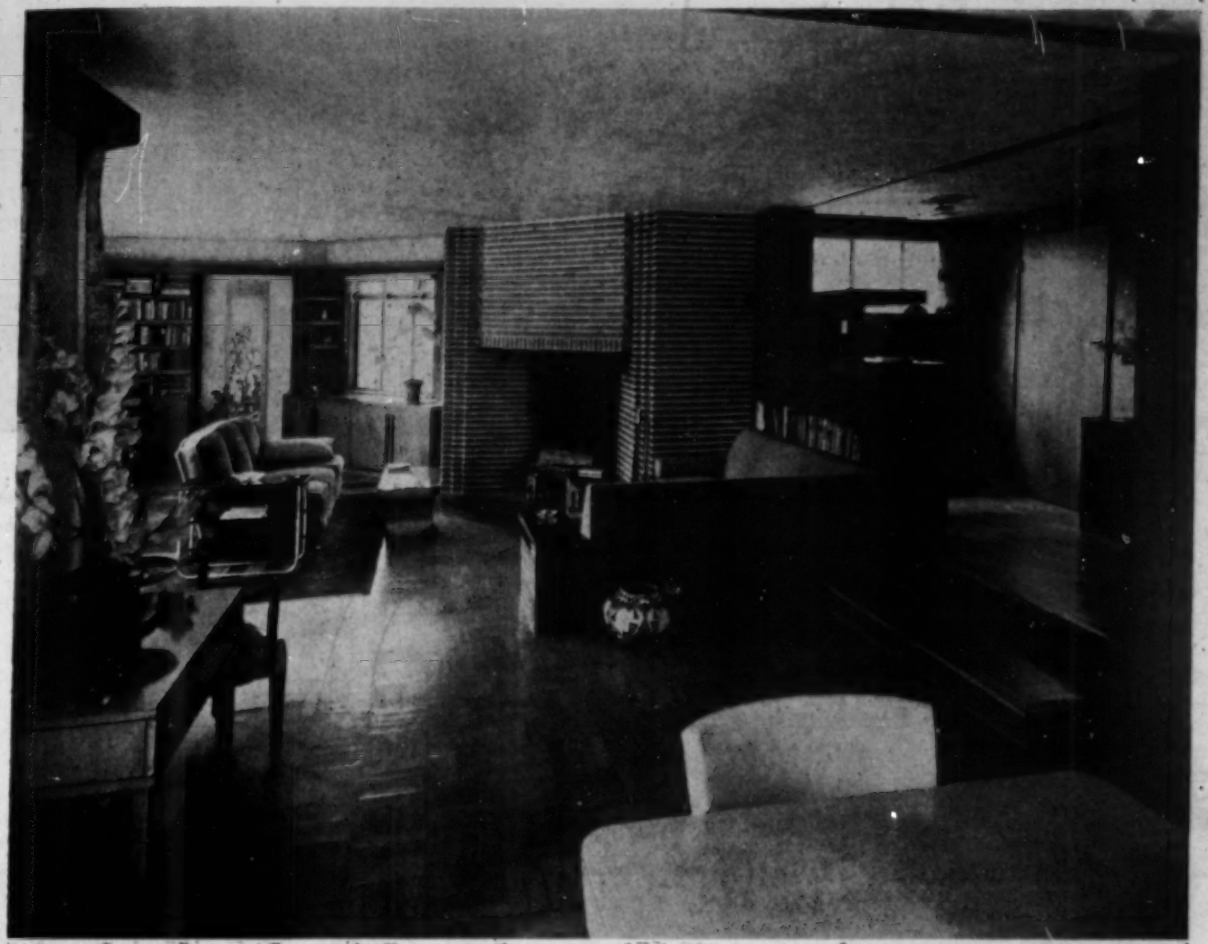
FOR PRIVACY ON A HILLTOP PLOT

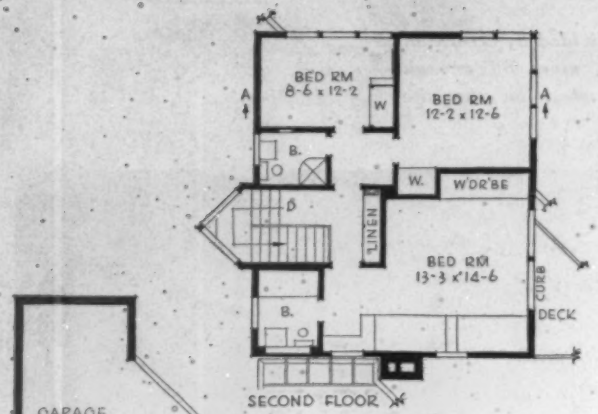
Residence for Mr. and Mrs. Otto Laporte, Ann Arbor, Mich. George B. Brigham, Architect

IF INDIVIDUAL planning of individual houses, for individuals who know their own minds, needed any defense, this house might be taken as Exhibit A. This plan has four objectives: (1) spread the house for maximum development of a lake view; (2) achieve full privacy from neighbors just off the view lines, for terrace as well as for rooms; (3) take advantage of contours for essential greenhouse and basement; (4) place garage space for easiest use of circular drive.

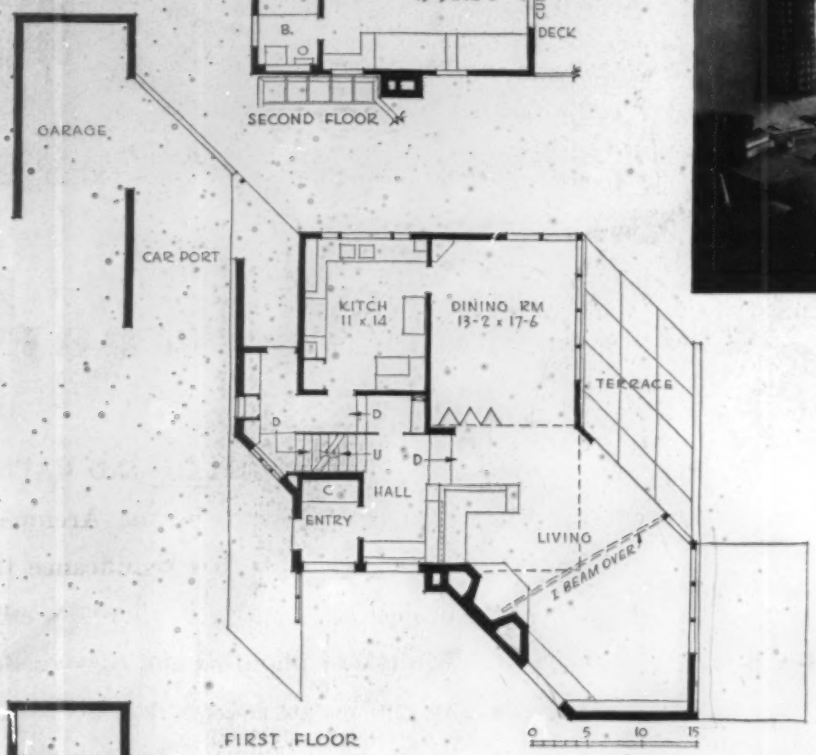


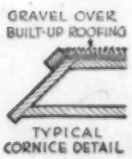
Extensive dining and living area can be thrown together, or divided by accordion partition. The huge open fireplace, reports the architect, gives off enough heat for the whole living-dining area, with plenty of wood on the site

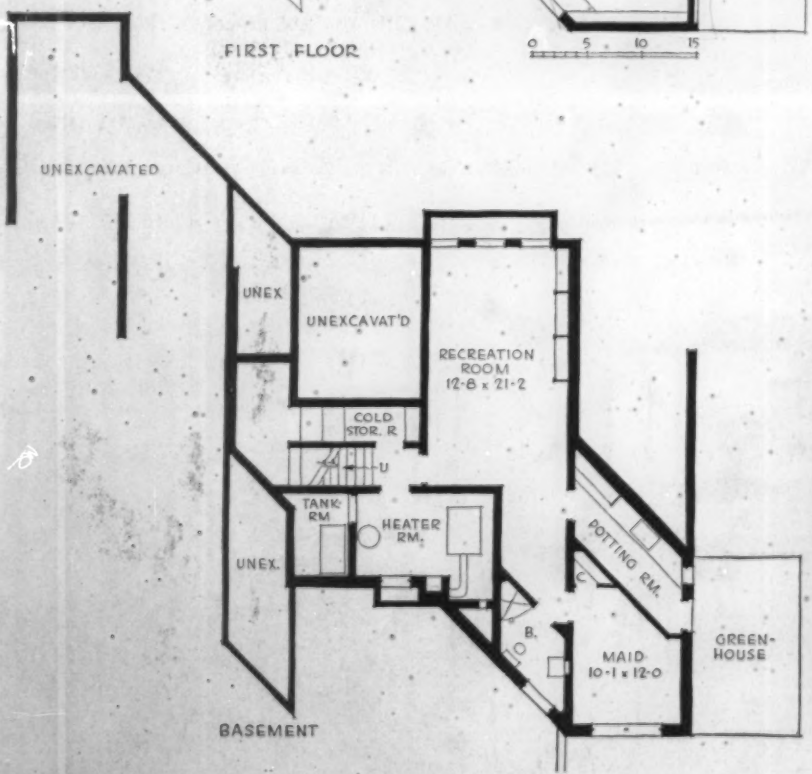




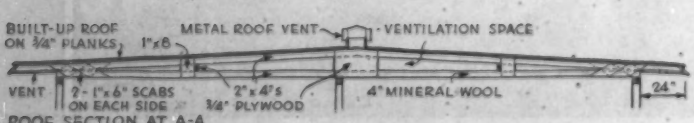
Bedroom-and-study (over dining room) has extensive windows looking toward the lake







The living-room end of the wing-nut plan utilizes natural contours to put greenhouse (on south wall) at basement level, and to give maid's room, bath full window height



Faneuil Hall in its original form was a Municipal Auditorium combined with a market and placed in the central shopping district. (The building in the foreground of the picture was a store.) Faneuil Hall was also remarkably related to all terminals—the docks were across the square, and the square made ample provision for parking early kinds of vehicles. In dealing with the modern problem of adequate terminals, in combination with the same civic elements, the Grand Rapids Parking Plan creates a solution which is strikingly paralled (sketch below)

SHOPPING TERMINALS AND STORES

Included in this study is the first presentation of the GRAND RAPIDS PARKING PLAN—the outcome of years of study by the Architects' Civic Design Group of Grand Rapids. The plan has significance that reaches far beyond the immediate project. It suggests a coherent method of approach, from the standpoint of physical planning and construction, to the most troublesome problem of the urban central district. It proposes economic formulas to help salvage slipping values. Its architectural value is perhaps even greater. Though it starts as a "parking plan" for the sake of better shopping terminals, it ends by opening the possibility of recreating the downtown area as a distinctive and coherent urban district. It affords a technique for placing the needed high and low buildings in a restful and harmonious relationship.

Included also is a survey, by an accomplished architect specializing in store work, of recent design trends as these have worked themselves out on the street, with further suggestions for the indjvidual store.

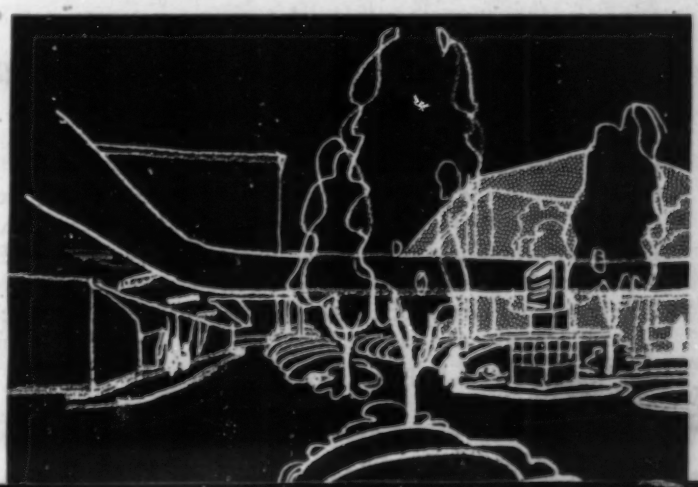
Architectural Record's

Building Types Study

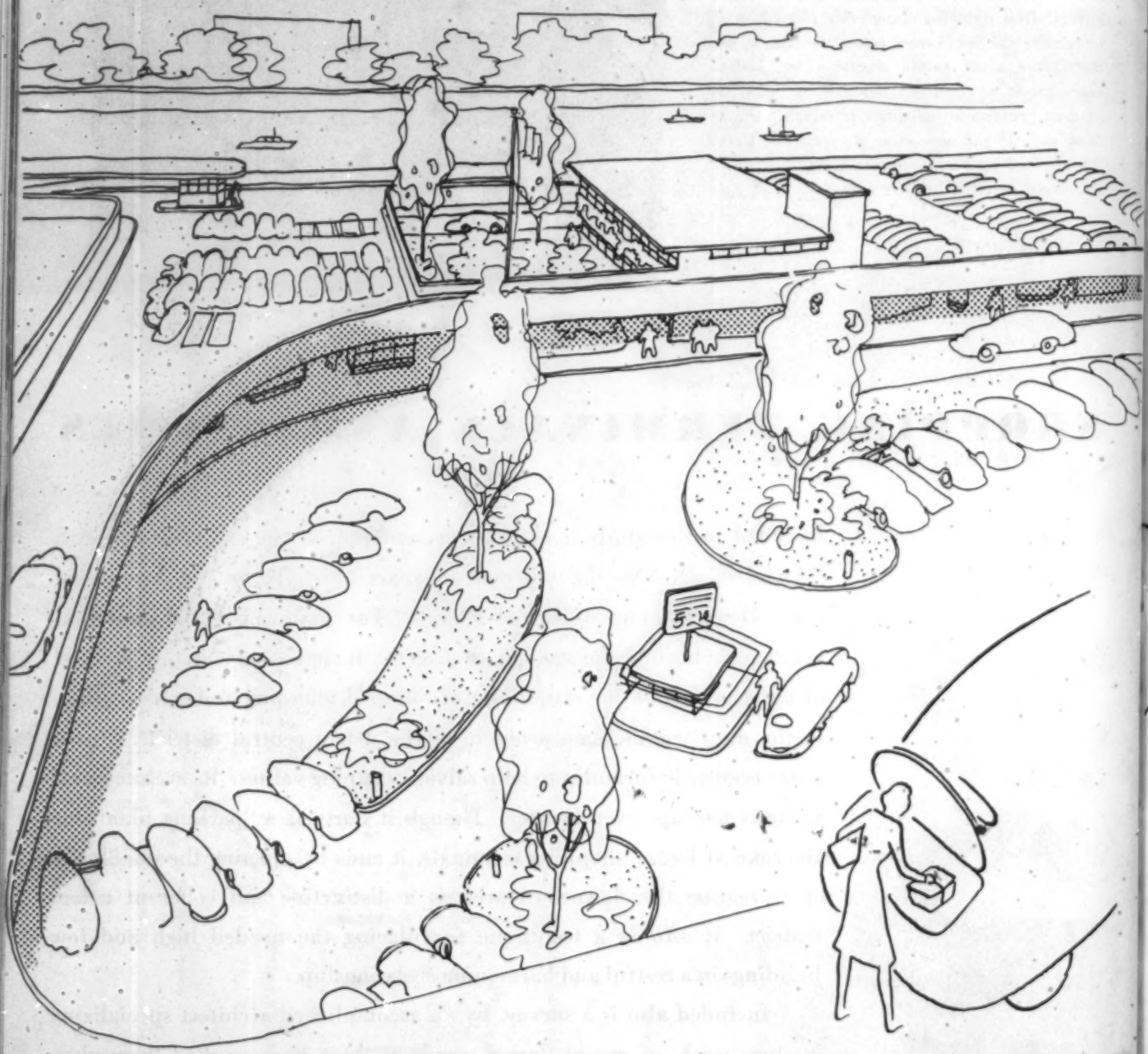
Number 98

In collaboration with

Fairchild Publications



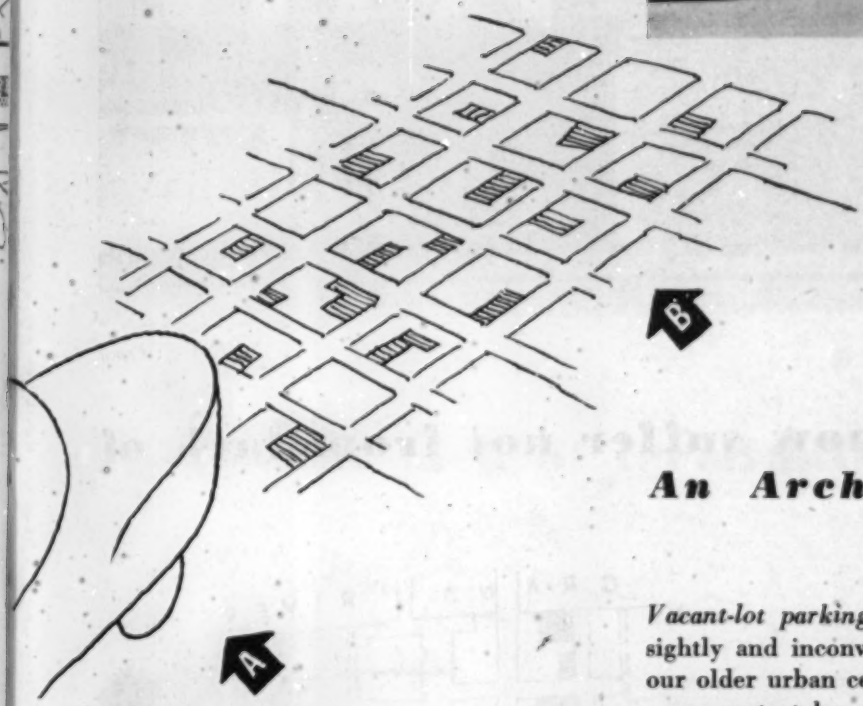
GRAND RAPIDS PARKING PLAN



to Rehabilitate Shopping at the Urban Center

By the Architects' Civic Design Group of Grand Rapids

GRAND RIVER COURT is more than a local solution: it represents a fresh method of approach to the Central District problem. Members of the Architects' Civic Design Group of Grand Rapids are: *Chairman of Steering Committee,* Victor E. Thebaud, AIA. *Design, Structural and Presentation:* Joseph Daverman; Victor E. Thebaud, AIA; Kenneth C. Welch, AIA; Antoine B. Campau (Robinson & Campau were architects, with Smith, Hinchman and Grylls, of the Civic Auditorium); Ralph Seager, AIA. *Public Relations:* Harry L. Meade, AIA; *Valuations:* Charles A. Crowe and Benjamin Hertel. Many other citizens contributed help and information.



A *is the preferred shopping vehicle, with built-in parcel carrier. It has plenty of places to go but no place to stop except at —*

B—*random parking lots left over by tax-inspired demolition. The result is —*

C—*a rather hopeless future for the central district*

An Architectural Solution

Vacant-lot parking and "tax-payer" stores have been unsightly and inconvenient but indispensable makeshifts in our older urban centers. The Grand Rapids Parking Plan proposes to take over their essential services in a manner that will create commercial and civic assets.

Private-car terminals are badly needed at the center—with vastly increased total capacity and area, far greater efficiency, incomparably more convenience. Individual action cannot achieve them, any more than the individual merchant can build and maintain an effective highway leading to his store.

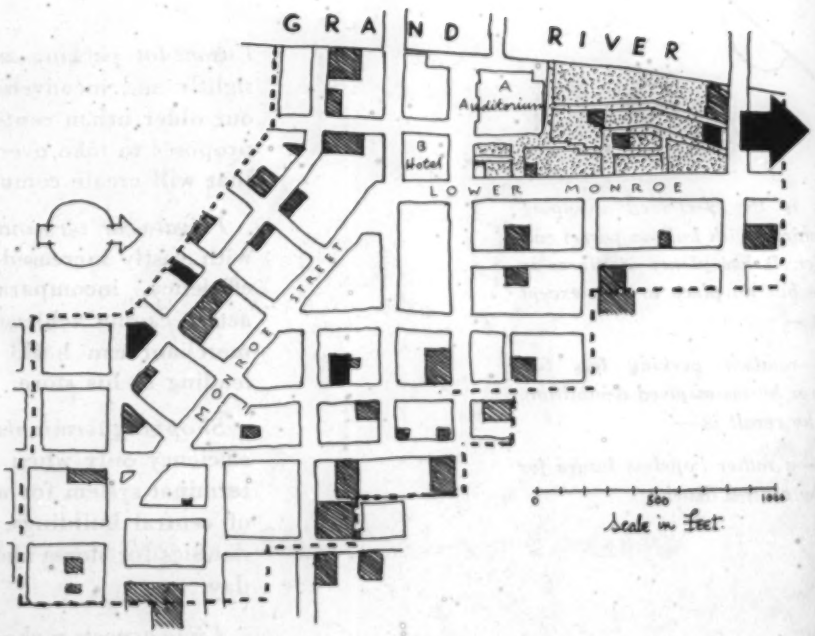
Shopping terminals, with their rapid turnover, reach top efficiency only when relieved of other duties as part of a terminal system for all kinds of central parking, all kinds of central buildings, all land uses. Thus, a terminal that doubles for stores and an auditorium prolongs the parking day.

Civic aspects make central private-car terminals a matter of city-wide concern, of careful analysis, of cooperative action involving financial institutions and many agencies.

Three-dimensional imagination and professional disinterest have nevertheless been essential in evolving this highly creative solution. The Grand Rapids Parking Plan promises a new, collected, harmonious skyline at the urban center. Taking Main Street out to the new green grass has been immeasurably easier than this achievement in bringing the grass back into the worst areas of old, dilapidated, discouraged Main Street.

VIEW 1: Front

Central districts now suffer not from lack of



WHAT the Grand Rapids Parking Plan started from may be seen on these two pages. Although the details are peculiar to Grand Rapids (and close attention to detail has made the study beautifully specific) yet close analogies may be drawn in a couple of hundred American cities, ranging in population all the way from 50,000 to 500,000.

The Central District of Grand Rapids was bounded for purposes of study as shown on the map on this page. It covers an area of 1.66 sq. mi., or 106 acres, or 4,633,000 sq. ft. Within the boundaries drawn are found all civic buildings, main hotels, banks, office buildings, department stores, central apparel stores, and furniture exposition buildings (a local specialty), of a community of 209,000 people.

The chief artery of this District is Monroe Street, the "Main Street" of Grand Rapids. Where it turns an angle and runs north (horizontally on the map) it becomes "Lower Monroe." The stippled area (upper right corner of map) lies between Lower Monroe and the Grand River. This area has been singled out for special treatment. It is mapped on the right-hand page at larger scale.

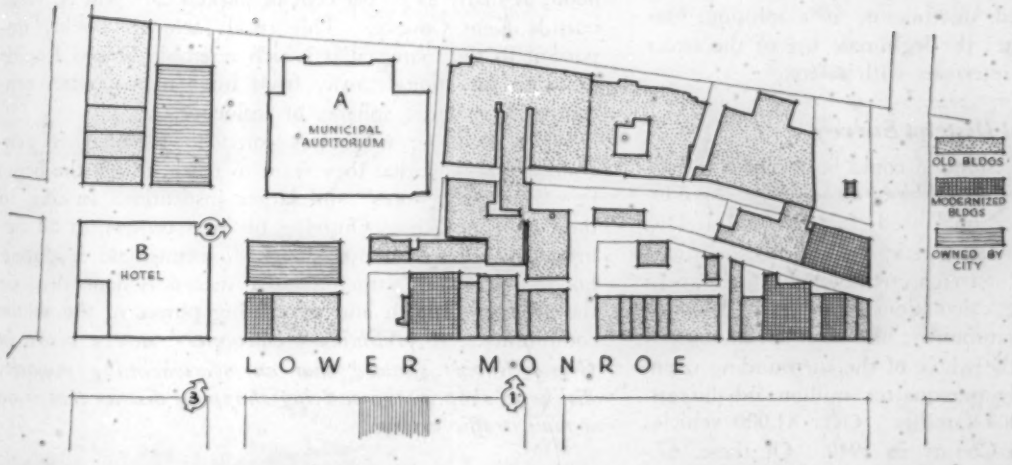
Scenes like those in the accompanying photographs are altogether too familiar. These fronts have been characterized as "a commercial slum." To their rear is an industrial conglomerate, lingering from the time when the Rapids of the "Grand" created important water power.

Obviously the Central District has no shortage of streets, lying as it does on both sides of the central artery. What the whole District cries out for is terminals—adequate, planned terminals for the all-powerful, all-numerous private automobile. The scattered pattern of shaded areas on the map, indicating "parking lots," betrays that an all-important economic function is provided by a mere afterthought.

These, then, were the uninspiring surroundings within which the Architects' Civic Design Group found their inspiring opportunity.

VIEW 2: Rear

access but lack of terminals for automobiles



Civic buildings share the problem

THE GRAND RAPIDS Civic Auditorium, in the very middle of this picture, is all but lost to view from the main artery, Monroe Street. One would never guess that it is a primary civic asset of the town. Its close juxtaposition with leading hotels helps attract many a convention and other gathering to the community; but the local citizen who wishes to hear a concert by the excellent local symphony orchestra has to start early and arrive home late for lack of available parking. In planning for commercial parking terminals in any city, the architect does well to be on the look-out for civic facilities which may be badly served today. These help carry the parking load around the clock, because their demands are made chiefly in the evening. They include churches, motion picture houses (to less degree) and other meeting places.

Terminal space must be greatly increased—

DOZENS of tests have proved that the automobile is by far the favorite vehicle of shoppers; yet the automobile has been a disruption, not an aid, to the older city and its center. Express highways and arterial projects are no help; they merely speed traffic across, around, or through the Central District all the faster.

Under present conditions, central owners and merchants are merely placed on a "railroad without a station," and are taxed for traffic programs which empty their own premises. This has caused many business men to lose confidence in existing centers as an investment. Holders of huge investments in these existing centers have been given a perfectly natural motive to resist every attempt at a constructive decentralization—even where they themselves might become a part of the process, to the advantage of their own central holdings.

These were the basic considerations that led the Grand Rapids Architects' Civic Design Group to seek their answer for the Central District not in terms of superhighways but of terminals—terminals for the temporary disposition of the private automobile.

Hitherto the only major off-street parking facility has been the vacant-lot variety, an unsightly, tax-inspired "economic freak." The parking lot has slowed down destructive decentralization in many localities, but is basically haphazard, crowded, uneconomic as a solution. On-street parking complicates the legitimate use of the street for moving traffic and interferes with safety.

First-Step: A Central District Survey

Any planned, rational solution could be reached, the architects concluded, only on the basis of comprehensive estimates of private-car terminal needs for the Central District taken as a whole. These estimates led to conclusions so striking that it would stretch credulity to present them without the underlying calculations.

The Grand Rapids community, like most urban centers, really takes in at least the whole of the surrounding county (Kent), with nearly one-quarter million inhabitants, members of some 64,000 families. Over 81,000 vehicles were registered in the County in 1940. Of these, 67,500 were private cars, privately operated, which means that there were more cars than families, more cars than homes with central heating or mechanical refrigerators. Manufacturers and experts forecast that there will be 25 per cent more automobiles in 1960 than in 1940, and that they will travel twice the distance. (The traffic in 1940 was ten times that of 1920.) It is suddenly discovered that the greater part of this travel is within the urban community!

The next step was to estimate how many of these cars would come in daily, and on peak days, into the Central District. For 1940, the last fairly normal year, estimates were made—on the basis of mass transportation use to the Center, customers per dollar of retail sales, size of the "permanent labor force," number of travelers coming in for recreation, parking spaces available, and other minor factors. On this basis, in 1940, only about 45 per cent, or a maximum of 50 per cent, of those coming to the Center within daytime hours came by private automobile.

How many will come in the future is directly dependent, in part, on the action to be taken respecting traffic facilities and convenient car terminals. It depends also, of course, on local purchasing power and the economic health of the community.

Some experience was gathered in a rather comprehensive survey, made in a large department store in another city of 300,000-400,000 population, over a three-day period at the beginning of the 1940 holiday shopping season: (1) Of the total customers in the store, 50 per cent came by private automobile to the Central District. (2) Almost 20 per cent of the customers in the store could be classed as non-residents—persons living outside the metropolitan area. (3) Of this number, 87 per cent had come to the Central District by private automobile.

Rural Customers Come Direct to the Center

This last is important, because of the considerable potential purchasing power of the ruralite, who is more dependent on his car than the urban dweller, and is attracted to whatever large urban center has ample convenient terminal space. Also this marginal shopper is the one who often tips the profit scale. In some of existing parking lots in Grand Rapids on Saturday afternoon, as many as 20 per cent of parked cars will be from outside Kent County. This rural factor is doubly important to the many cities which resemble Grand Rapids in being far enough away from huge metropolitan centers to have large spheres of influence.

When outlying customers come to town it is generally the Center that they want to reach, to get the benefit of the "big stores" and larger institutions lacking in their own localities. Outlying business centers, as all figures show, cater almost entirely to immediate neighborhoods. Accordingly their relative success is dependent on the economic health and purchasing power of the whole community. *A preliminary consumers' survey made in Grand Rapids showed that an overwhelming majority dislike to shop in the outlying shopping district that is on a main traffic artery.*

Total Central District Automobile Traffic

The total traffic picture includes (a) the "central labor force"; (b) the "shopping force" (exclusive of labor force who shop); (c) recreational and commercial visitors other than the above.

For estimating purposes the Design Group assumed the high level of employment that the Committee for Economic Development has said is entirely possible. On this basis the Group concludes that at least 45 per cent of the "central labor force" and 75 per cent of the shopping, recreational, and other commercial "force" will come to the Center by private automobile, and will need adequate parking. There results Table 1, below.

Why Parking Terminals Must "Take to the Roof"

When the whole load is taken into account, the parking shortage is found to be almost incredibly large. Not only do the existing 5,800 *spaces* take care of only 65

and planned for more than a single level

per cent of peak-day requirements (Table 3), but in parking *area* they are even more pathetically deficient. The "labor force" mainly does all-day parking, which is possible at a minimum comfort standard of 180 sq. ft. per car at a turnover of 1.1 per day. For shopping and other facilities, the allowance used was 235 sq. ft. per car and turnover was placed at 5 per day; allowing for a 20 per cent increase on peak days, there was found a need for the grand total of 2,200,000 sq. ft. needed for parking. (Table 2.)

Now this is four times as much area as is available in the Grand Rapids Central District today. *It equals no less than 90 per cent of all available land in the whole Central District,* outside of streets, sidewalks, existing parking lots, and ground area of garages.

To the off-hand observer the assignment would seem chimerical. To solve it required the architects' free and constructive imagination. They concluded that parking must be on more than one level. In their own city they found vast areas fully susceptible of being rebuilt in large units to provide roof parking above single-story structures. Multi-level garages would not even be needed. As a practical test, they applied this reasoning to the run-down area shown on the previous two pages. They wholly redesigned this area into "Grand River Court," which is shown on the two pages following.

TABLE 1. NUMBER OF PEOPLE EXPECTED TO COME TO GRAND RAPIDS CENTRAL DISTRICT

Classification:	Method of Transportation Used Coming to Center				
	By G.R. Motor Coach	Other Transit Lines	Private Automobile	Walk, Taxi, Other	Total
Central Labor Force	6,500	1,150	7,650	1,700	17,000
Shopping Force (exclusive of labor force who shop)	2,400	600	13,100	1,400	17,500
Recreational, other Commercial (excl. of above)	400	100	2,000	1,200	3,700
TOTAL	9,500	1,850	22,750	4,300	38,200
Percentage	24%	5%	60%	11%	100%

TABLE 2. PARKING SPACES REQUIRED FOR AUTOMOBILE USERS EXPECTED IN CENTRAL DISTRICT

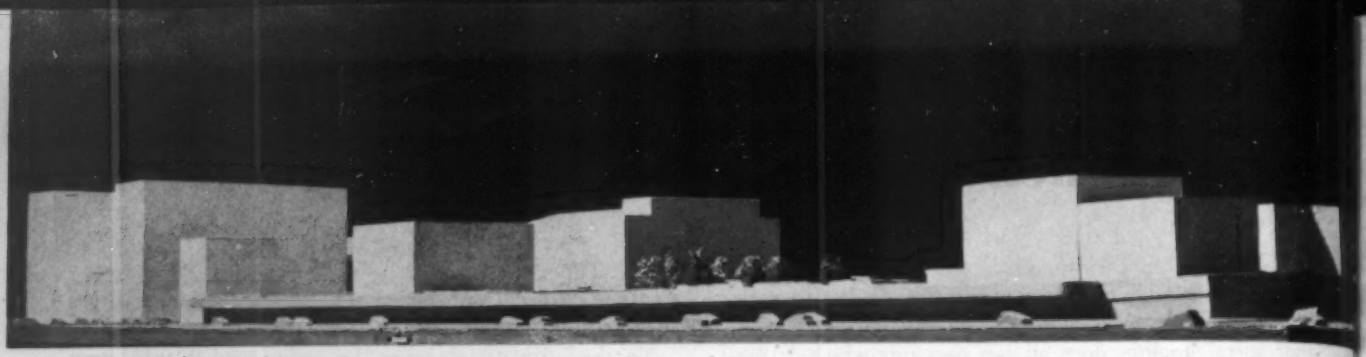
Classification	Number Persons	Persons per Car	Number of Cars	Turnover Parking Space	Parking Spaces Req'd.	Parking Area Sq. ft. per Car
Labor Force	7,650	1.4	5,500	1.1	5,000	180
Shopping Force*	13,100	1.7	7,700	5.0	1,540	235
Business, etc.	2,000	1.7	1,190	2.0	590	235
TOTAL	22,750	1.6	14,390	1.9	7,130	(2,200,000)

On a normal peak shopping day (double average daily sales) when shopping force turnover increases to 6 (less labor force as such, etc.) the parking spaces required would be 9,000

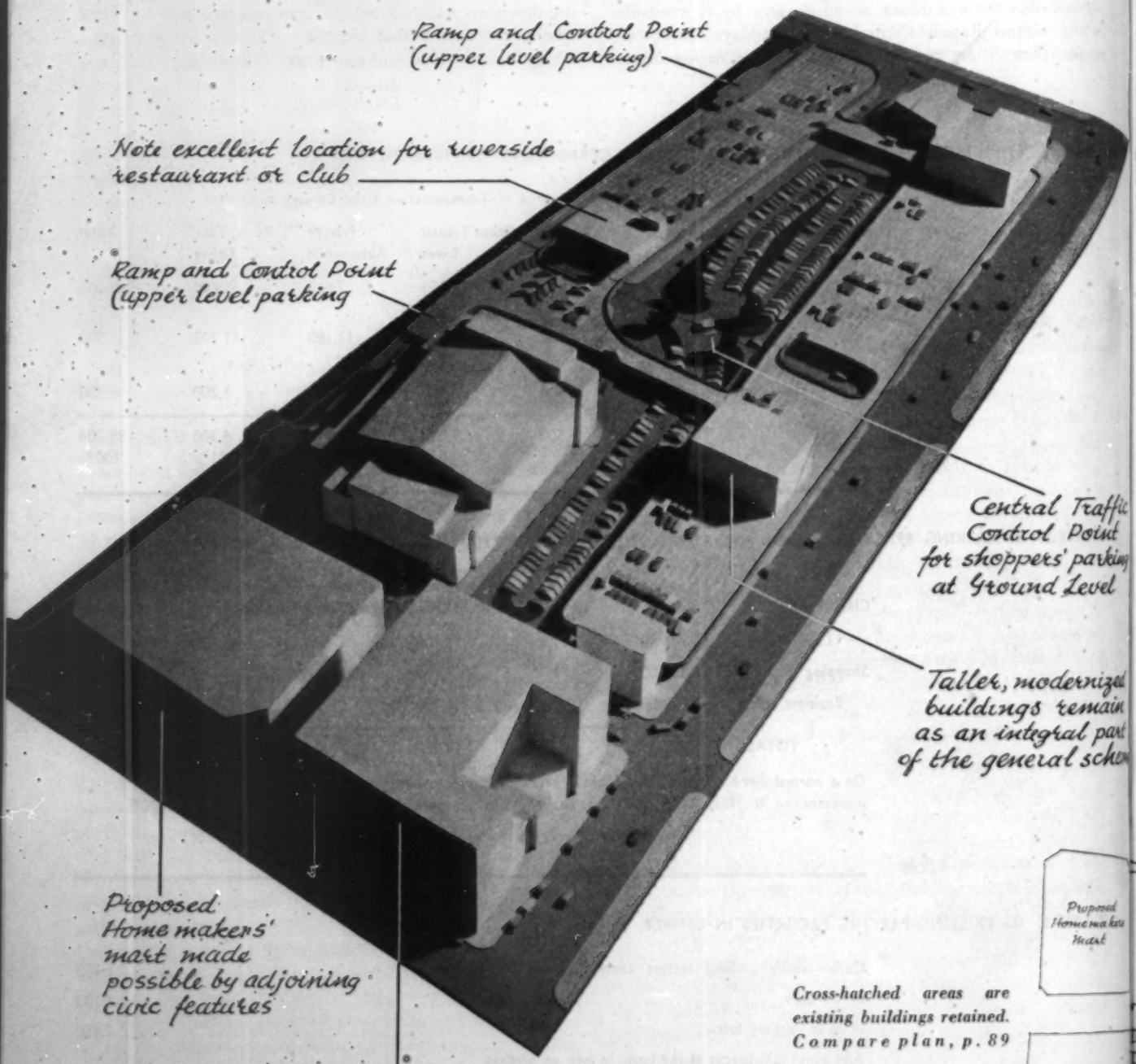
**On basis of an average shopping day (yearly retail sales divided by 300)*

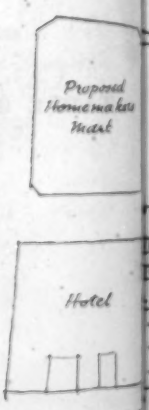
TABLE 3. EXISTING PARKING FACILITIES IN CENTER, 1944

Curb—mostly parking meters (only 135 on Monroe Ave.)	1,150
In Garages	1,200
In open parking lots	2,450
Add about 600 spaces at the curb, in lots, on bridges, etc., on periphery; and another 400 within few blocks of the Central District	1,000
TOTAL	5,800
"DEFICIT"	3,200



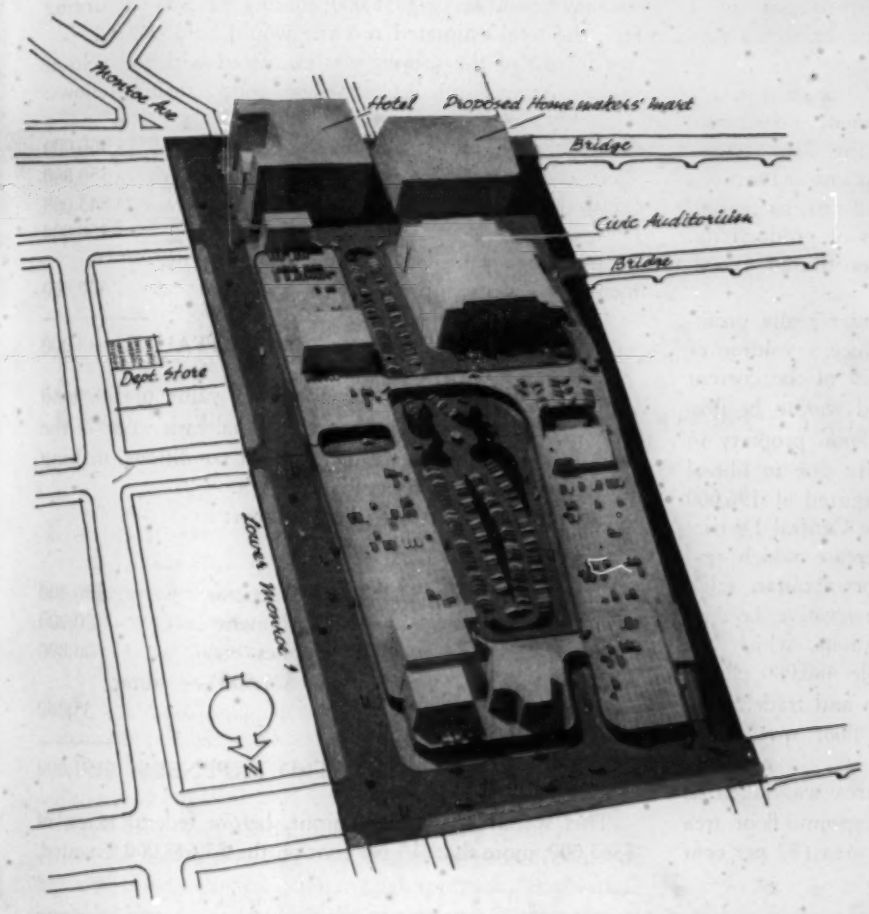
GRAND RIVER COURT has two main levels

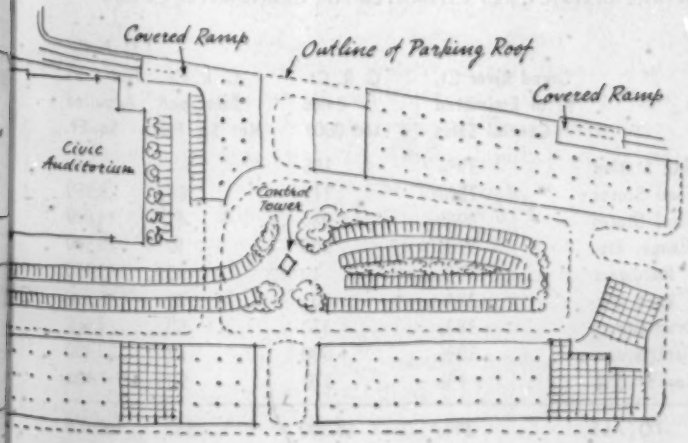

Ramp and Control Point (upper level parking)
Note excellent location for riverside restaurant or club
Ramp and Control Point (upper level parking
Central Traffic Control Point for shoppers' parking at Ground Level
Taller, modernized buildings remain as an integral part of the general scheme
Proposed Home makers' mart made possible by adjoining civic features
Hotel within walking distance is a valuable factor



Cross-hatched areas are existing buildings retained.
Compare plan, p. 89

combines with civic features





HERE is the solution of the Architects' Civic Design Group for that part of the Central District in Grand Rapids which they call Grand River Court.

1. It is immediately manifest that this is a civic improvement and a commercial opportunity combined. The new plan gives the Auditorium a needed setting, creates openness, greenery, vistas to the river from midtown streets.

2. Commercial elements of the project are voluntarily limited to "100 per cent consumers' goods and services," which are placed in helpful concentration.

3. The one-story height must not be confused with "taxpayer" practice. Construction is permanent, solid enough to support the heavily loaded roof.

4. The two parking levels, street and roof, provide 850 roomy parking spaces (235 sq. ft. per car). Although this new terminal increases *car capacity* of the Central District by only 12 per cent, *parking area* has had to be increased by 60 per cent, showing how much has to be done to get away from prevalent standards of crowding. Drivers park own cars.

5. Parking is separated out by 3 kinds. *Street level* parking, primarily for the "shopping force" and adapted to quick turnover, is controlled at a central point of entry, not open until 9:30 a.m. Parking time is short. *Roof level* parking, by contrast, is open to the central labor force 24 hours a day. *Auditorium* parking, which mainly serves an evening crowd, will be aided by signal controls at the double ramps at each end, permitting dispersal of traffic in less than 20 minutes. Auditorium capacity of 6,000 has encouraged setting up a number of stations in excess of labor and shopping needs of immediate vicinity.

6. The wide overhang of the parking roof, cantilevered across the whole sidewalk, not only hides the less sightly aspects of parking from view, but creates an orderly framework for merchandising. It creates needed shade for modern "open fronts" without deep arcaded entrances; makes orderly signs indispensable; relieves the individual merchant of onerous and often ineffective snow-removal duty on the sidewalk.

The close juxtaposition of civic and commercial elements is a worthy modern counterpart for well-ordered historical market places such as Faneuil Hall.

An essential requirement is a rewarding profit

AN ESSENTIAL requirement of the Grand Rapids Parking Plan is that the new shopping centers with built-in terminals must really show an attractive profit. Architectural analysis must find reliable sources of income and a feasible plan of business operation.

For Grand River Court, the Architects' Group figured what they considered a safe and attractive profit above 10 per cent on an investment of $3,643,000. They contemplated that the project might invoke the Urban Redevelopment Act of Michigan, which could be made to apply to their particular problem. Yet they stated that the crucial requirement for success in every application of their plan was that a majority of property owners must want to cooperate, turning their present liabilities into profitable assets.

The general method of analysis could be applied to any community. First, retail sales in pertinent lines were ascertained for the entire community, using 1940 Census figures; then estimates were made of the Central District's share. Finally, computations were made of returns reasonably to be expected, at conservative rates of productivity, for space of a similar kind in the reconstituted Grand River Court. (Table 4)

To make this consumers' shopping center really profitable, it was estimated that it must produce a volume of $5,300,000. This was equal to 24 per cent of the current Central District sales of $22,300,000, and was to be produced on 26 per cent as much land. (Total property in the Grand River Court is 387,000 sq. ft.; due to liberal traffic provisions, built-up area is only figured at 196,000 sq. ft.; area devoted to similar use in the Central District as a whole is 760,000 sq. ft.) The increase which was implied was only 5 per cent of all metropolitan sales, and this was considered especially conservative because based on the present bad traffic conditions, which are scarcely conducive to luring the accessible 400,000 people outside the metropolitan area to come in and trade. Also, productivity factors per square foot of floor space were conservatively estimated.

In figuring rentals, the net rentable area was taken as 210,000 sq. ft. This was based on a *gross* ground-floor area of 196,000 sq. ft., a *net* first-floor selling area (82 per cent of gross) of 160,000 sq. ft., (see Table 4, last column), and retention of upper floors, now in use, containing an area of 50,000 sq. ft.

In principle, rent would be charged as a percentage of net sales, varying from the accepted 2 per cent for supermarkets to 10 per cent for restaurants. Average rent would come to about $3 per sq. ft. of usable area (exclusive of any basement space); the street floor average, $3.60; upper floors, $1. Heat and power would be an additional charge of the redevelopment corporation, added to the rent bill.

On this basis, total revenue would add up to $630,000. Allowing in a highly conservative manner for 15 per cent vacancy would leave $535,000; adding $21,000 in parking fees, the total estimated revenue would be $556,000.

The cost of the project was estimated with the help of Owens, Ames Kimball Co., general contractors, as follows:

New Building, modernization of existing bldgs.	$1,900,000
Misc. construction, paving, landsc., equipment	350,000
Land value, based on assessed valuation	843,000
Fees, etc.	150,000
Unamortized value of buildings and improvements, loss of use, minus any salvage value	400,000
TOTAL	$3,643,000

It was conceded that the appraised value of the land probably represents more than the actual cash value of the land and improvements under present conditions, making the value shown conservatively high.

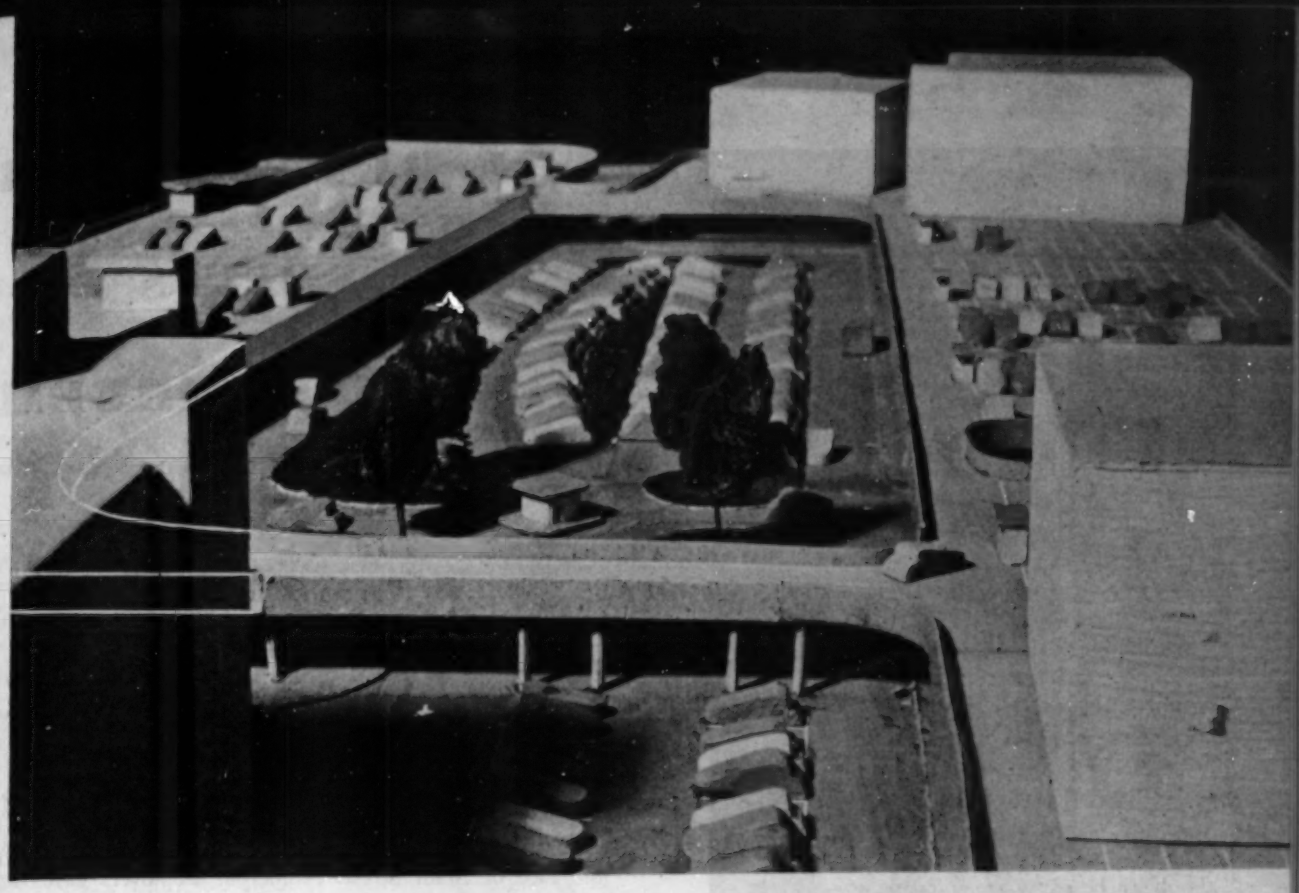
Expenses were estimated as follows:

Amortization and depreciation,	
4 per cent on $2,150,000 structures	$86,000
20 per cent on $100,000 equipment	20,000
Operating expenses, payroll, supplies, etc.	50,000
Municipal Tax (present tax $21,500 — some unpaid)	35,000
TOTAL ESTIMATED EXPENSES	$191,000

This would leave a net profit, before federal taxes, of $365,000, more than 10 per cent on the $3,643,000 invested.

TABLE 4. RETAIL SALES (A) IN ENTIRE CITY (B) IN CENTRAL DISTRICT (C) ESTIMATED FOR GRAND RIVER COURT

Total Sales in City (add 000)	Share of City Sales estimated for Central District	Estimated Sales in Center (add 000)	Type of Store	Grand River Ct. % of Estimated Central Sales	G. R. Ct. Sales (add 000)	G. R. Ct. Sales per Net Sq. Ft.	G. R. Ct. Net Area Required Sq. Ft.
4,783	10%	478	Filling Station	39%	185	—	—
17,461	5%	920	Food Stores	78%	715	80	8,950
8,133	63%	5,100	Apparel Stores	39%	1,980	45	44,000
4,505	35%	1,560	Furniture, Appliance, Etc.	39%	605	10	60,500
699	15%	105	Hardware	39%	40	35	1,150
2,166	25%	540	Eating, Bars, etc.	38%	205	25	8,200
3,895	25%	970	Drug Stores	38%	370	50	7,400
8,600	25%	2,130	Other-Miscl. Stores	39%	830	37	22,400
13,632	77%	10,520	General Merchandise	4%	370	50	7,400
$63,854	35%	$22,320	TOTALS	24%	$5,300	$32	160,000



Civic and commercial parking combined—compare with view on page 89 taken from corresponding position

The greatest gain is made in the city picture

For communities all through the United States, the Grand Rapids Parking Plan is full of the most far-reaching suggestions. It penetrates the gloom of the Central Districts with a coherent method for salvaging values that are going, for turning deficits into attractive profits.

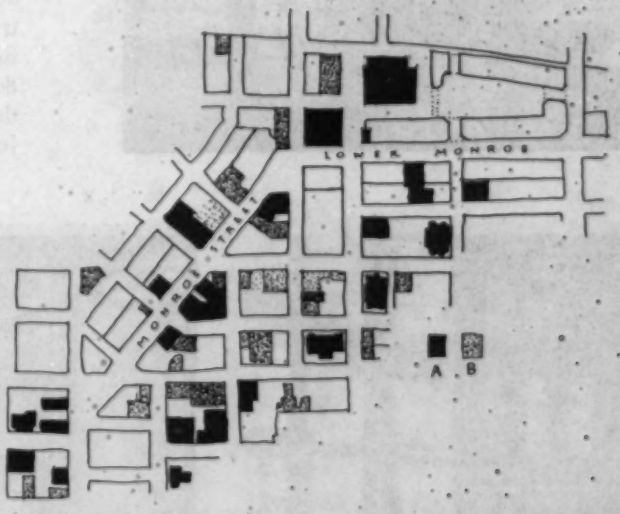
For architects, the suggestions are even more inspiriting. Architects have long been discouraged with the formless downtown chaos. All too often the most excellent individual store, hotel, civic monument, could be nullified by ill-conceived and aborted neighbors.

The effect of the Grand Rapids Parking Plan is to re-create the downtown area as a distinctive and coherent District. Unlike many a theoretical approach, its practical analysis puts an *agreeable relation between high and low buildings into a cogent economic framework.*

Multi-storied buildings and low buildings are both integral elements in the American central scheme. And yet, as the adjoining analytical map of Grand Rapids illustrates, the proportion of multi-storied buildings to low ones is small in all but the largest metropolitan centers.

Between the two kinds, the Grand Rapids Plan creates a clean break and a useful inter-relationship. The Plan achieves three improvements at a single stroke. (1) Unsightly parking is removed from the street front, put in order on the roof. (2) Low buildings are reduced to that single, common single-story height at which they may not only function best but produce a long, quiet, restful horizontal in place of the restless sawtooth skyline of today. (3) Tall buildings stand out, make truly decisive vertical accents properly held apart.

Above all, so far as architects are concerned, the Grand Rapids Parking Plan is an example of "large-scale planning technique" that is not based on some kind of abstraction but on step-by-step development out of the facts —organized by a bold, three-dimensional imagination.



This map serves mainly as an illustration of analytical method. The black areas (A) represent firstclass fireproof buildings now standing; the stippled areas (B) are plots occupied by structures that are older but essentially sound. Remaining areas, covering most of the urban center, are generally available for single-story rebuilding and two-level parking

THE RETAIL STORE AND ITS DESIGN PROBLEMS

By Morris Lapidus, A.I.A.

Illustrated by photographs of the author's work

A RECENT trip from coast to coast provided a chance to study the face of Main Street. Numerous stop-overs gave time to make the study deliberate. Store design has reached a certain resting-point, through the cessation of work during the war period.

In particular the trip was used to see how those recent trends which have been filling the pages of the professional publications have been worked out in practice.

The strong impression was that this recent work is very good but as yet all too scarce. The new installations were outstanding in their communities. They produced not only the most attractive looking stores but the stores which were most successful in drawing customers.

Where merchants were suffering despite new structural operations, it was sometimes through the use of misunderstood and superficial "modernistic." This "modernistic" work differs from true modern work in consisting mostly of a change in decoration. It is often produced by amateurs with very little training in design. Where the aim of "modernistic" (which first sprang up in the ill-fated twenties) is to change over the decoration, the aim of the modern architect is to change over the store into a better kind of merchandising instrument. Judging by results, these architects are on the right track.

Gottscho-Schleisner

Samuel H. Gottscho

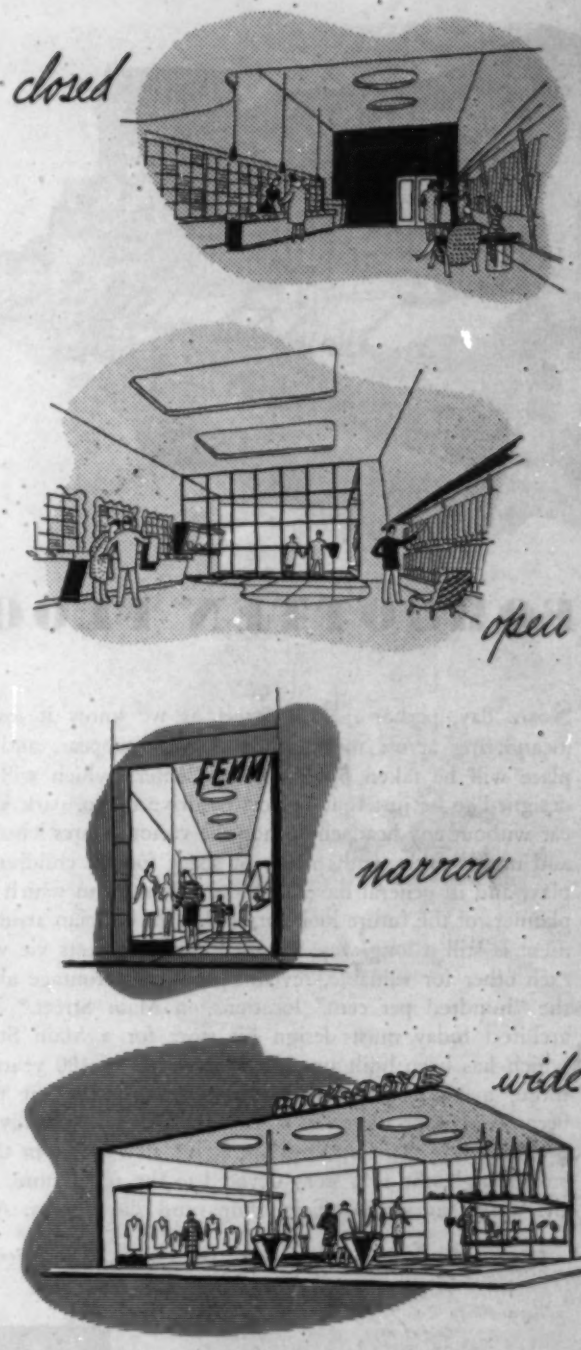
P. A.

THE STORE FRONT

One trend in store fronts stands out above all others, namely, the open treatment. It not only makes an attractive front, but makes for better display, more inviting appearance, and a closer coordination between display and selling. It gives the retailer additional dividends in daytime, because the interior of his store is made bright and cheerful by the admission of daylight; and at night the normal illumination of the interior produces a luminosity which the closed store front lacks. Designing an open store front, however, gives the architect a number of additional problems which the ordinary store front did not present. Lighting must be considered in much greater detail, both on the exterior and the interior, and must be carefully thought out for both daylight and night illumination. The interior of the store, because of the very nature of the open store front, becomes an integral part of the store front design, and must be so planned.

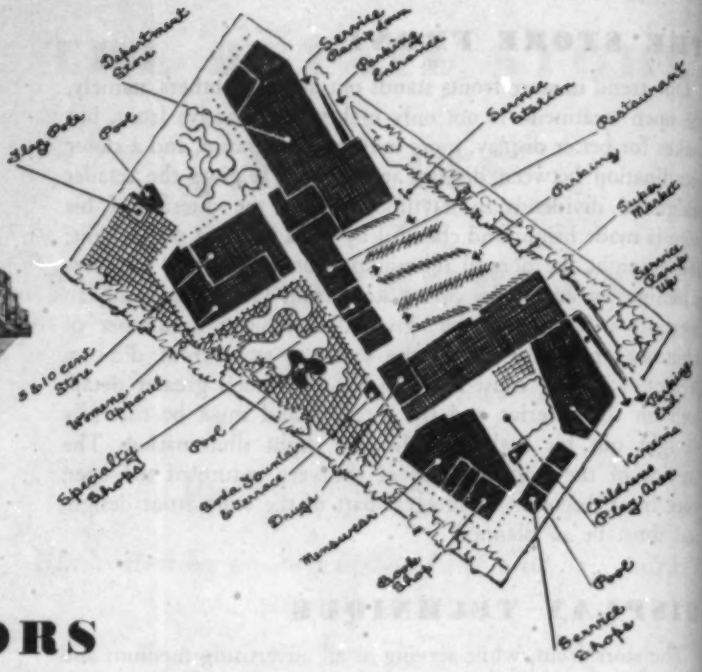
DISPLAY TECHNIQUE

The store front, while serving as an advertising medium and as an inviting entrance to a store, is primarily a display mechanism. The greatest number of stores on Main Street operate on the premise that the more you show, the more customers you get. Until such time as the shopping habits of America change, the retailer insists that his store front must permit him to show as much and as varied a line of his merchandise as possible. A great sense of openness with an unobstructed view of the store and as much display area as possible; these two factors must be compensated in both the wide and the narrow store by careful plannning and arrangement of displays. Present-day display technique, in the hands of display experts, has reached a high level of perfection. The window backgrounds must be in keeping with the general design of the front but, at the same time, should form a suitable setting for the merchandise. Where the architect has designed a background too independently, the window display department has lost no time in covering it with various display devices. The result is that designed display backgrounds never meet the public eye; they were covered by the display department. In many cases I personally have arranged inexpensive plywood panel backgrounds which are honestly intended to be covered with temporary seasonal display backgrounds, while in others, a carefully styled background has gracefully blended for years with seasonal changes.



Ellison Photo Co.

Samuel H. Gottscho

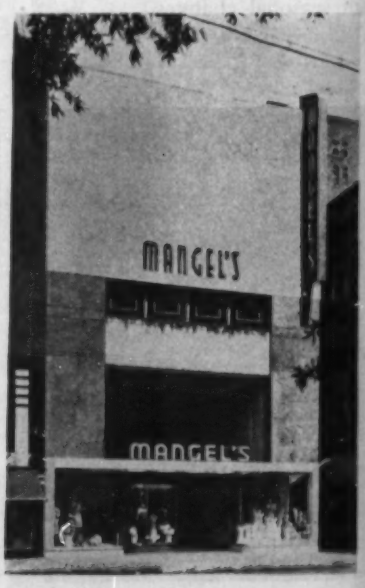


FORGOTTEN FLOORS

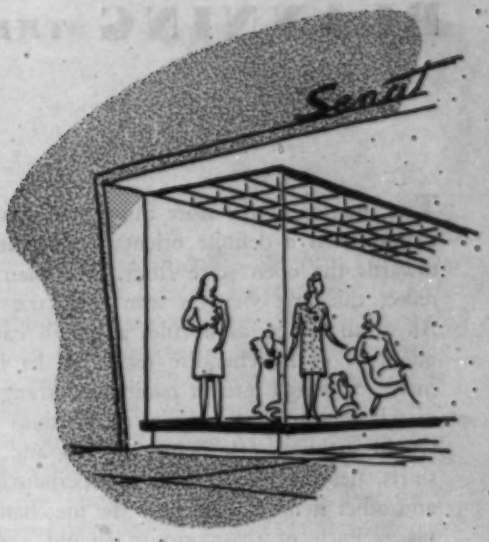
SOME day, perhaps, Main Street as we know it today, meandering across the continent, will disappear, and its place will be taken by Shopping Centers which will be designed to be just that—places to drive up to, park your car without any headaches, shop the various stores leisurely and under cover, with plenty of space for the children to play, and in general have all those amenities to which the planners of the future look forward. This Utopian arrangement is still a long way off. Real estate interests vie with each other for valuable, revenue-producing frontage along the "hundred per cent" locations on Main Street.* The architect today must design his store for a Main Street which has been built up during a period of 100 years or more; a Main Street which has changed in that time because of a peculiar set of circumstances. Originally, as each building went up on Main Street, it was two or three stories high, the first story devoted to the retail store, and the upper stories to offices, shops and showrooms. As a city or town grew, eventually one or more office buildings were erected which could give the many services that make large office buildings so desirable. As a result, we find on the Main Street of today, the upper floors, unrentable and forgotten. Such rental as they could bring is not sufficient to warrant giving up 4 or 5 feet of frontage which would be required as the entrance to these upper floors. The owner and the retailer do not care what happens above the store front. These are the forgotten floors. While we wait for our Utopian shopping center, let us at least in today's designs convince the owner and the retailer of the value of refacing an entire building. In effect, the upper stories are a billboard which, properly handled, should produce the same effects as the advertising billboard. The photographs at the bottom of the page show three examples, in three widely scattered towns, of stores handled for the same retailer. Regardless of whether the upper floors serve only as a background for a sign, or whether they are more intricately treated, they are certainly a part of the general scheme for remodeling Main Street.

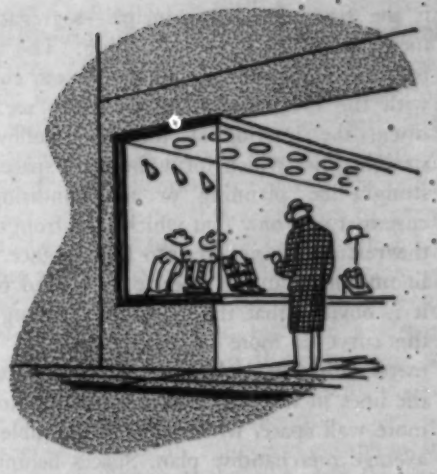
*The prospects for this are better in "blighted" areas. See the article on page 86.—Ed.

Ellison Photo Co.



LIGHTING THE STORE FRONT





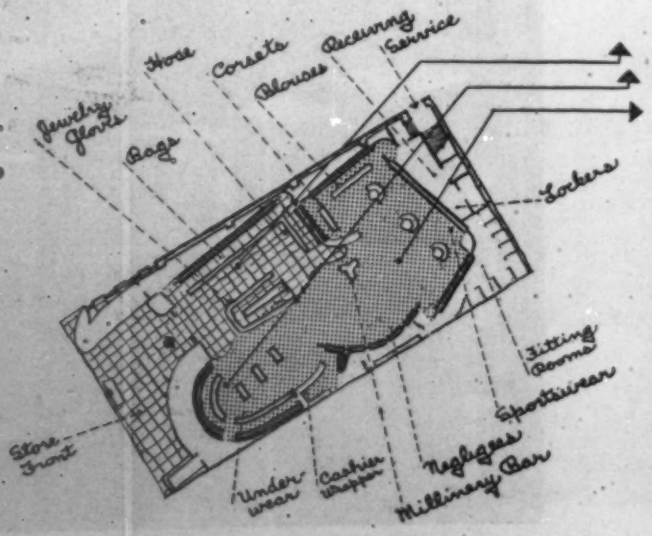
VERY few stores have successful window lighting. The properly illuminated window would be one in which the source of illumination, except in special instances, was completely concealed from view, but was nevertheless arranged so as to flood the entire window with a high intensity of general, over-all lighting. In the past, it has been the custom either to build valances as a part of the store front (a design-stifling expedient) or to hang valances in the show window, or, as a final resort, to expose the source of light in some pleasant pattern. None of these expedients is successful. Either they stand in the way of good design or they produce an unpleasant glare for anyone looking into the show windows. The accompanying sketches show two approaches: the "egg-crate" ceiling, which effectively baffles the light source and permits almost complete light transference, or, at the other extreme, the "Swiss cheese" pattern, a series of round openings in the ceiling (height permitting), with highpowered spot and flood lights for controlled lighting where uniformity is not essential. I am sure that there are many other means of achieving the same end, namely, high, uniform intensity, whether from incandescent or fluorescent sources, the actual light source being concealed from the shopper.

LIGHTING THE STORE INTERIOR

IN lighting the store interior, the lighting must be worked out around the store front so that there is a sufficiently high intensity to overcome the blank appearance of glass during daylight, due to the great variation in light intensity between outside and inside. The problem in lighting will be, what to use —incandescent, fluorescent, or cold cathode. Each of these has its own special qualities; incandescent permits powerful light concentration; fluorescent, good intensity with a fairly low-level surface brilliance at the source; and cold cathode, continuity of lighting in any form or shape, with a uniformity almost unobtainable by the first two. It would take too much space to go into any greater detail on the use of these three types of lighting, but lighting sources should be handled like the instruments in an orchestra, all playing together to produce a pleasing and desirable effect. One factor that should not be overlooked is the possibility of using light not only as a source of illumination, but as a decorative and planning medium. The plan and its attending customer circulation can be greatly enhanced by light disposition. In other words, a pattern of flush light panels in the ceiling may guide the customer. The accompanying photograph shows all three sources of light combined—incandescent for brilliant lighting on counters, fluorescent for illumination of the merchandise in the cases, and cold cathode for continuous through lighting.

PLANNING THE STORE INTERIOR

THE interior of the store must be designed so that there is a definite orientation in the plan towards the open store front. The plan must reflect this first view as seen from the street. All retail stores, as a rule, although carrying one type of merchandise (such as, let us say men's clothing), are in reality an arrangement of a number of merchandise subdivisions which would include such items as suits and coats; shirts, ties and socks; hats and perhaps shoes; and other items according to the merchandising place. Each of these groups should really be considered as shops within a shop. This then, is the first planning principle—segregation of merchandise into group selling. The second principle I might label, "surround your customer with the merchandise he wants to see." Too often, the interior of the store follows the straight lines which form the store space. With straight-line planning or merchandising, the customer sees only that which is in front of him, the rest stretching off into the distance. If the line of merchandise were to be curved in plan, it is obvious that the customer standing inside the curve is more or less surrounded by the merchandise he is looking at. This curving of the lines in the plan makes it possible to create more wall space, which is most desirable in the average merchandise plan. Spaces behind these curving or sloping lines in the plan can be used to great advantage for stock rooms, fitting rooms, wrapping spaces, and many other functions necessary in retail merchandising. The illustrated plan and the accompanying photographs show the two principles of grouping and planning, as well as orientation towards the open front.



DESIGNING THE STORE INTERIOR

P. A. Dearborn

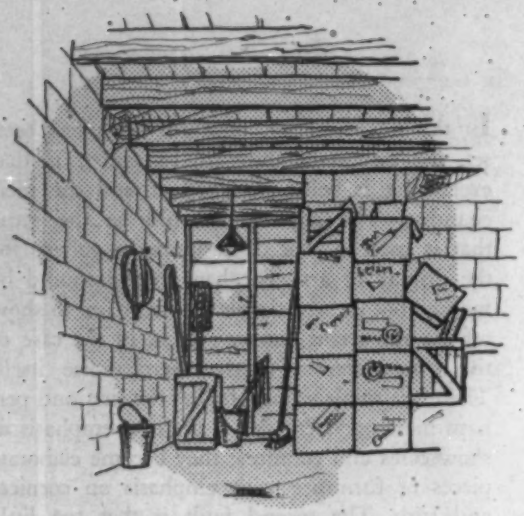
In the store interior, once the plan has been set, the important thing to remember is that everything is being designed around the merchandise. The approach should be the same that is used in that of designing a gallery for the display of art. The background should be worked out to be a simple frame or foil to show off the important feature which, in the case of the store interior, is the merchandise itself. There are two common faults; the first and perhaps most prevalent one is the over-emphasis of show cases and counters; they become elaborate pieces of furniture with emphasis on cornices and trim. The second fault is that too little thought is given to housing the merchandise for the most efficient handling. Each particular showcase should be studied in direct relationship to the merchandise it holds. The other improper approach to the interior is to overdesign the wall surfaces into which the merchandise is set. To me, the classic example is that of a store in which the garments were housed in a case made to resemble a circus cage, with the rest of the wall painted with a mural depicting the whole circus tent. Each group of merchandising, if the group plan is used, should be carefully studied to get the most sympathetic background for the sale of the particular merchandise. Small touches of display are always helpful, but too much display means an additional headache for the Display Department, and too much merchandise collecting dust.

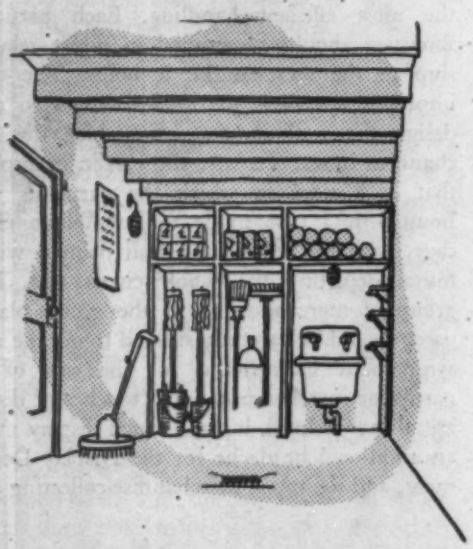
Ellison Photo Co.

Ellison Photo Co.

Gottscho-Schleisner

BEHIND THE SCENES





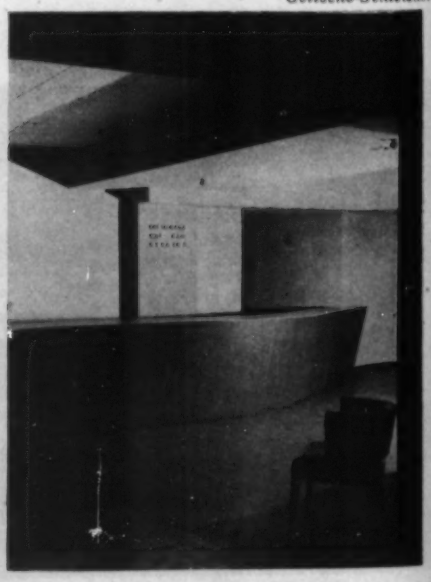
Customer Amenities and Store Utilities

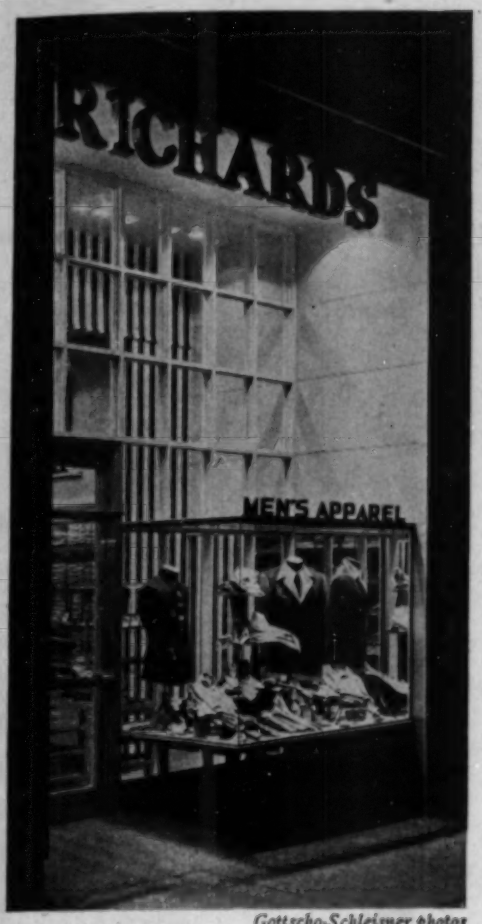
THERE are many functions which go on "behind the scenes" which are every bit as important in the smooth functioning of a retail store as the store front and the interior. Certain items are a part of the store interior; these include fitting rooms, listening booths in music and radio stores, credit booths and cashier and wrapping stations. Such provisions might even be stretched to include play pens in children's apparel stores, and certainly customer toilets and washrooms. Behind the scenes are such store utilities as air conditioning and heating, receiving and marking, merchandise storage, packing and shipping, layaway and will-call rooms, store supply rooms (non-merchandise) bushling rooms or repair shops for alteration of clothing, the window dresser's stock room and shop, the porter's supply room and sink, locker rooms, rest rooms and toilets for employees. All of these functions merit study by the architect. In visits to various stores which have been really thoughtfully remodeled, I can still hear the effusive language of the air conditioning repair man who has been relieved of the necessity of moving a couple of dozen boxes of stock off the air conditioning equipment so he can get at it, or the window dresser who no longer finds himself trying to create a background in the boiler room. In the average existing store the porter usually finds himself putting pails and mops on top of the sales girls' lockers instead of into a simple, well-designed cupboard where the waxing machine and the mops have their own particular niche. When merchandise is received, there should be a room where the cartons can be quickly stacked, with adequate provisions for keeping discarded cartons and enough tables and hand rods to sort and hang merchandise while it is being ticketed and otherwise prepared for display in the store. All of these things are a part of the smoothly functioning store, and have their very definite place on the drawing boards of the store architect.

Ellison Photo Co.

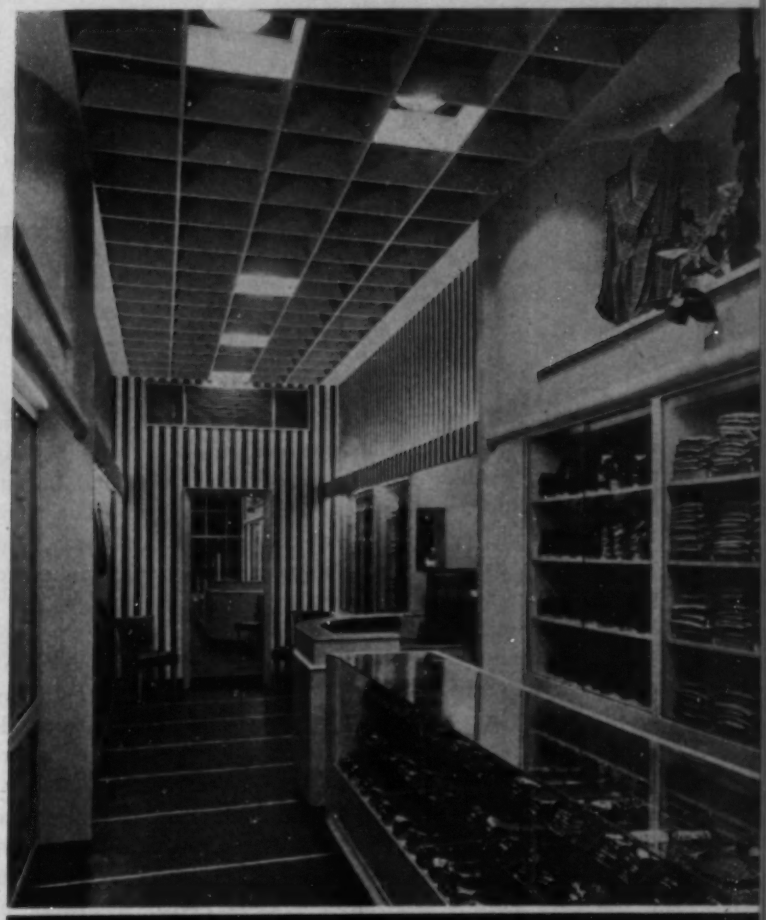
Samuel H. Gottscho

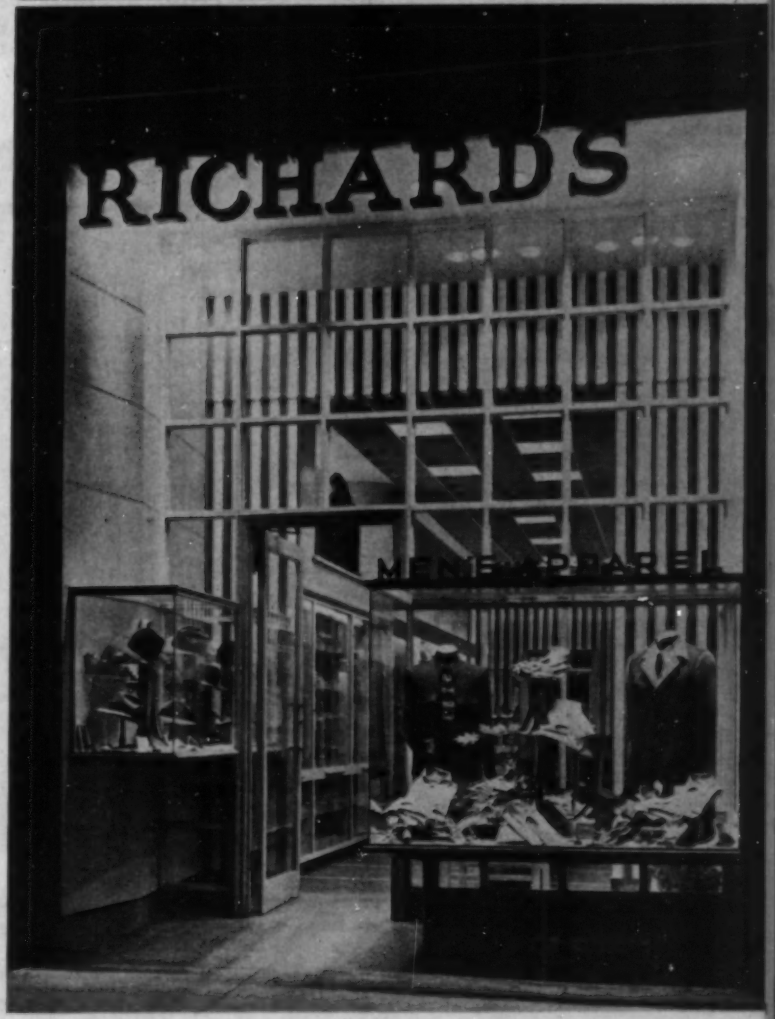
Gottscho-Schleisner





Gottscho-Schleisner photos





FOR A 12-FOOT FRONT

Manhattan Men's Store

Jose A. Fernandez, Architect

AN EXTREMELY narrow store width of only 12 feet gave the architect a tight and interesting problem. The newer technique was used, in which an "open front" is modified by the use of display in glass show cases placed in the arcaded entrance. The full-height, mullioned glass screen which forms the front contributes all possible effect of size to the very small store; the second screen, or frame, made of plywood and covered with striped wallpaper, adds brilliance needed to attract attention. A noteworthy detail is the hanging of the store sign from the ceiling, so that the wooden letters need no separate fixtures but work in silhouette against the general light.

The type of "egg-crate" light baffle used overhead provides diffusion with low maintenance cost; ceiling above is black.

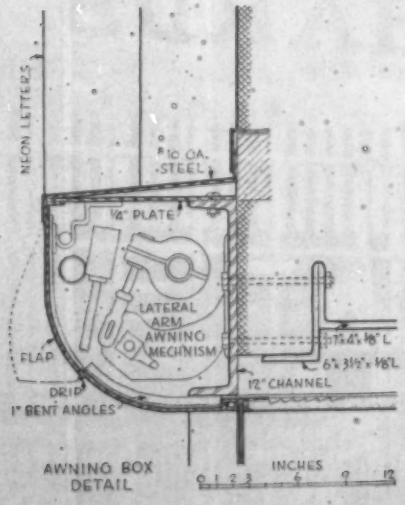
WIDE STORE SPACE WITH OPEN FRONT

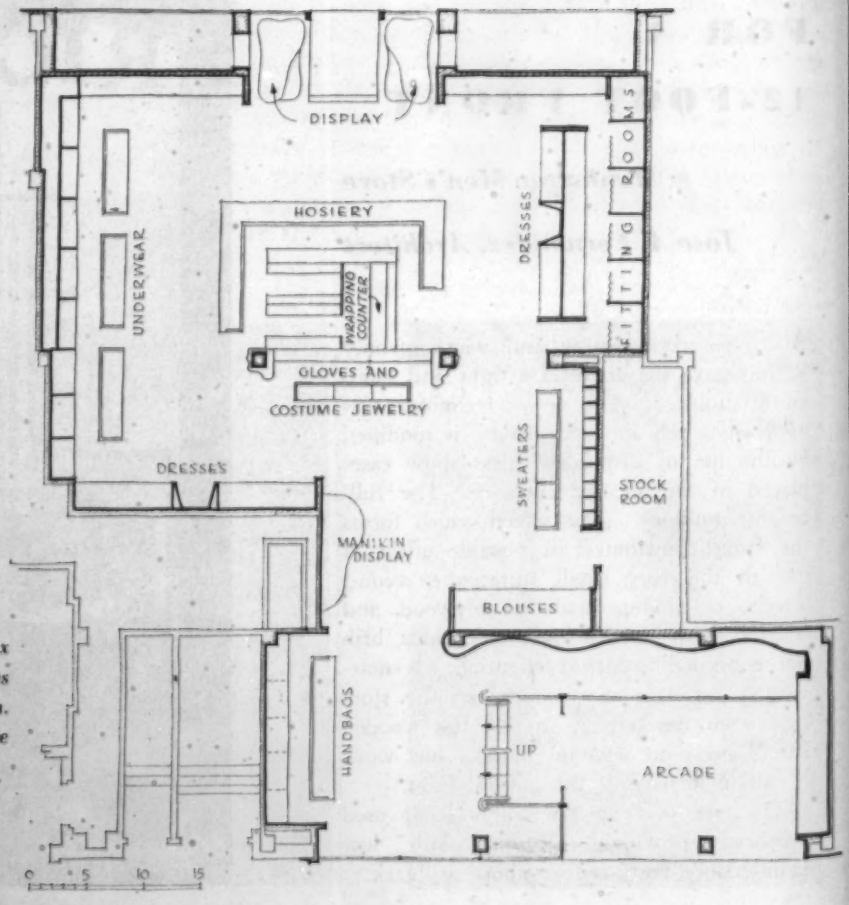
Women's Apparel Store at Parkchester, New York

Morris Ketchum, Jr., of Ketchum, Gina and Sharp, Architects

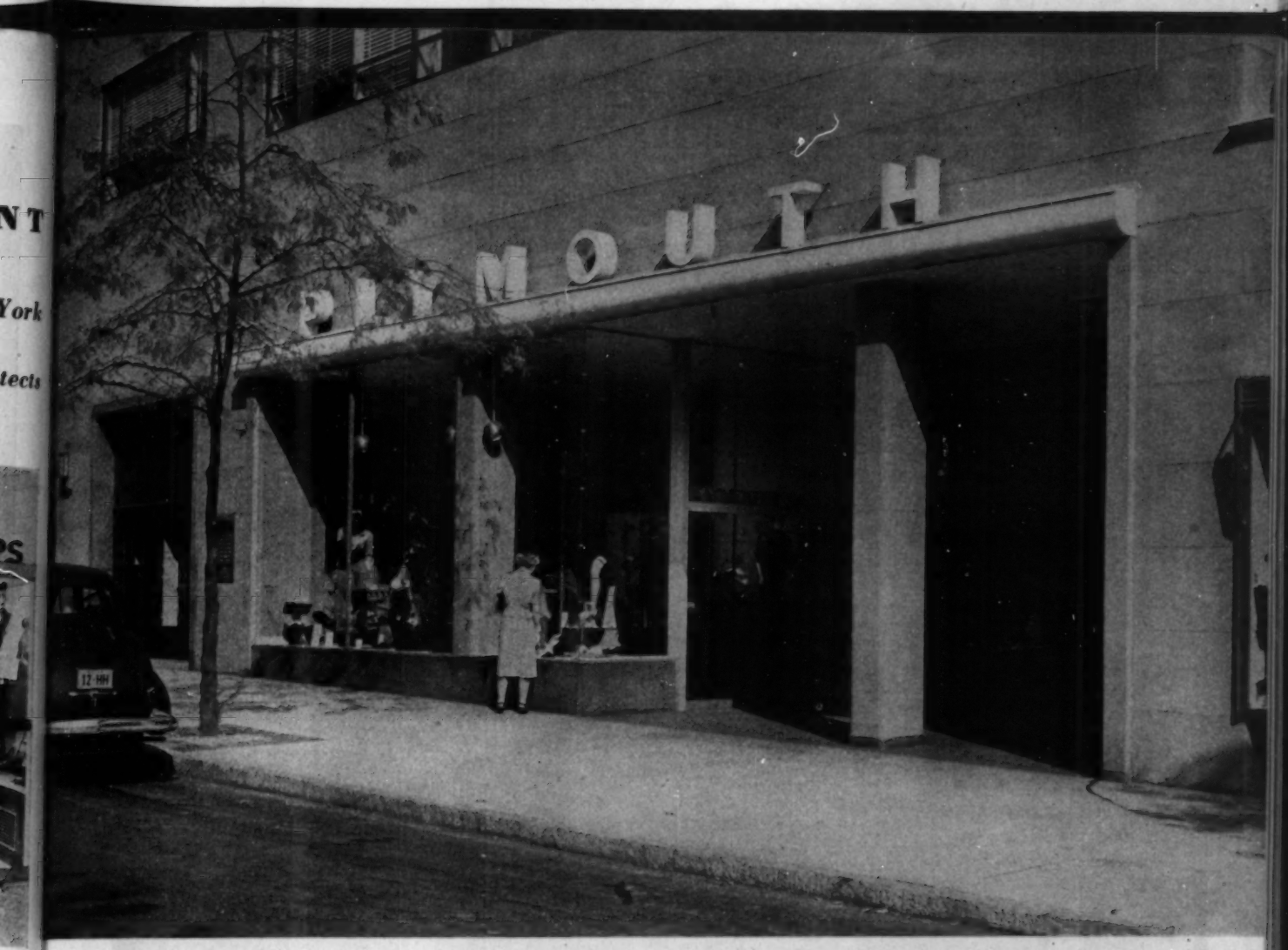
THOUGH highly up-to-date in design, this store was finished just before war requirements interposed materials limitations. The wide space made possible an interior that would surround the customer with merchandise, without resort to planning acrobatics. The main front, also wide, permitted a triple display treatment in an unforced manner; low, backless display of goods in the large window, opening a view to the interior; manikins against full backdrop in the arcade; eye-level showcase display, also in the arcade, along the righthand wall. Continuity is emphasized everywhere; glazing is flush to the ceiling, which carries unbroken through the arcade; wall materials and bulkhead lines also carry through. By a nice change of direction in the entry, and judicious choice of step locations for the changed level, a natural windbreak is created.

The architect chose to keep the interior quiet and simple, enlivened by good colors and surface textures. One wall in the bags and pocketbooks division is yellow leather; the display lobby has one mirrored wall; interior colors generally are pastel, woodwork bleached oak, columns covered with gray flexglass or woodweave; floor a cream terazzo.





Detail, above, of flush-mounted awning box (see photo on righthand page) emphasizes the easy continuity in an unforced plan. Irregular space yields a generous arcade



Ben Schnall photos

1. *Top view shows unbroken ceiling, flush glazing mouldings of "open face"*

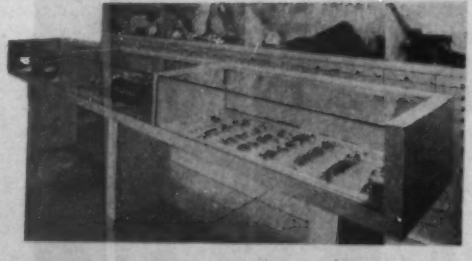
2. *Lower view shows combination of open and backed display, showcase right*

3. *Turning the corner provides natural windcatch; steps behind door stop draft*

4. *White-enamel sign letters are backed with neon lighting, not front-lighted*

5. *"Eye-ball" spotlights are neat, dispense with need for a disturbing valence*

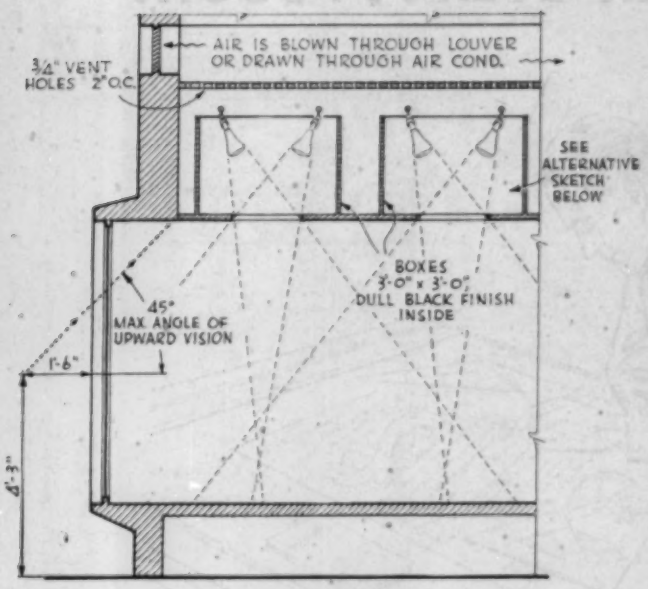
6. *Valence across arcade (lower right) is the window-dresser's cultural drag*



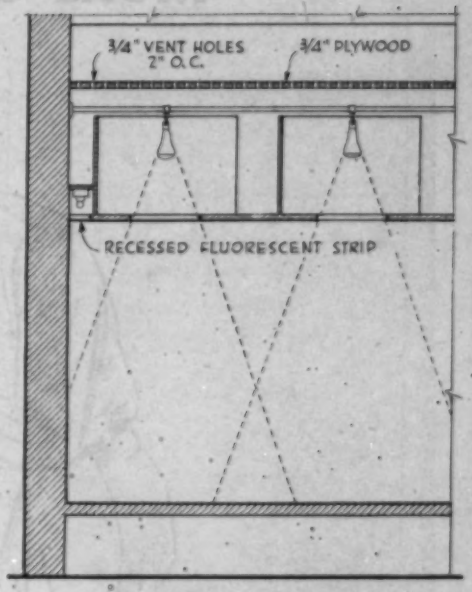
Interior makes unusually quiet use of such elements as shadow boxes (view above); show cases have simple vertical slabs for legs. Column is covered with "woodweave." Floor is of cream-colored terrazzo. The intent was apparently to keep all elements uncluttered

HIGH INTENSITY LIGHTING FOR "OPEN FRONT" SHOW WINDOWS

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
FEBRUARY, 1945

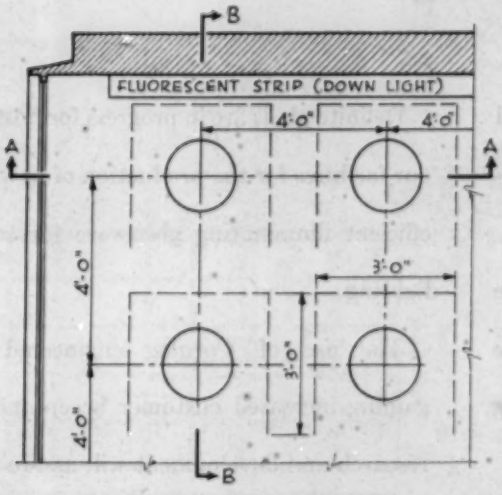

AIR IS BLOWN THROUGH LOUVER OR DRAWN THROUGH AIR COND.
¾" VENT HOLES 2" O.C.
SEE ALTERNATIVE SKETCH BELOW
BOXES 3'-0" x 3'-0" DULL BLACK FINISH INSIDE
45° MAX. ANGLE OF UPWARD VISION
1'-6"
4'-3"

SECTION A-A



SECTION B-B

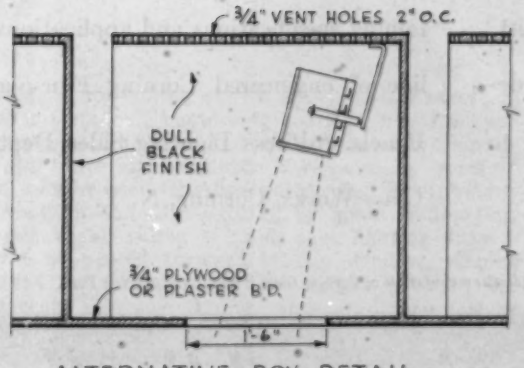
SCALE ¼" = 1'-0"



CEILING PLAN

The lighting diagrams on this and the following page show some standard methods of achieving the high level illumination mentioned in the article by Morris Lapidus on page 99. Many variations are possible. The types shown would be particularly applicable to the specialty shop window where a continuous flush ceiling is desired through the main selling area and show windows.

The "Swiss-cheese" pattern shown on this page consists of holes in a simple hung ceiling through which the light from flood or spot lights is directed on the merchandise. The light sources themselves must not be visible from the street (see diagram for theoretical angle of vision). Also there must be some method of dissipating the heat from high wattage lamps, either by an exhaust at the front of the store, or into the main selling area where it would be taken care of by the main air conditioning system. For background illumination it is well to include one or more strips of recessed fluorescent light along the wall.



ALTERNATIVE BOX DETAIL
SCALE ½" = 1'-0"

NOTE LAMPS MAY BE USED AS SHOWN HERE IN LIEU OF ARRANGEMENT SHOWN IN SECTION "A-A", AT LEFT ABOVE. HOLES WILL THEN BE 8" DIAMETER AND ON 1'-3" TO 1'-6" CENTERS.

ALTERNATIVE LIGHTING DETAIL
SCALE 1" = 1'-0"

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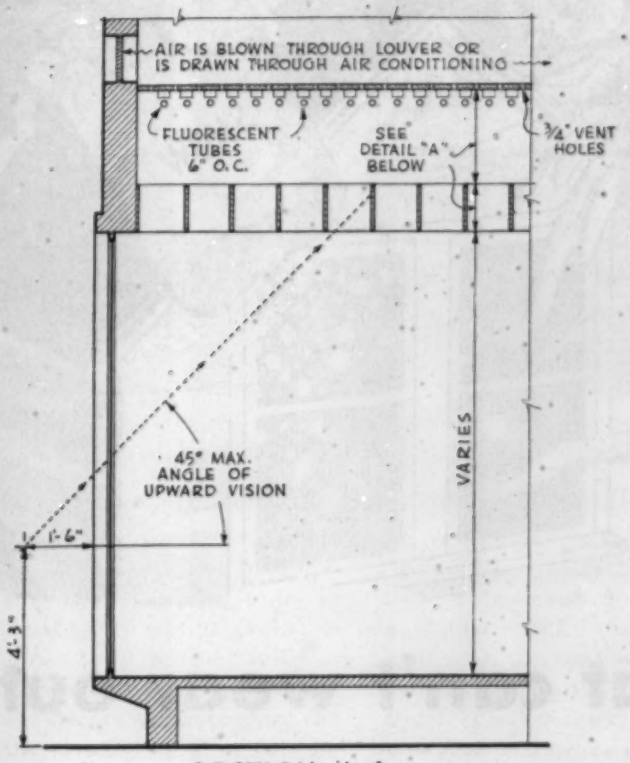
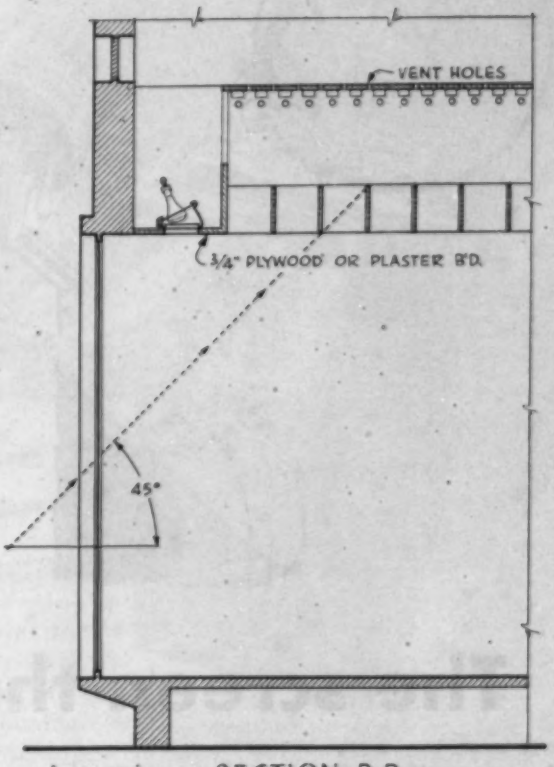
Corning Engineered Lightingware
BRAND

HIGH INTENSITY LIGHTING FOR "OPEN FRONT" SHOW WINDOWS

TIME SAVER STANDARDS
FEBRUARY 1945

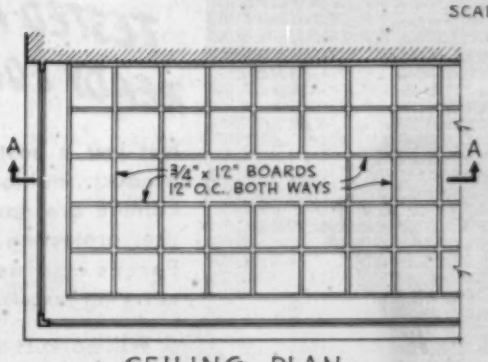


SECTION A-A

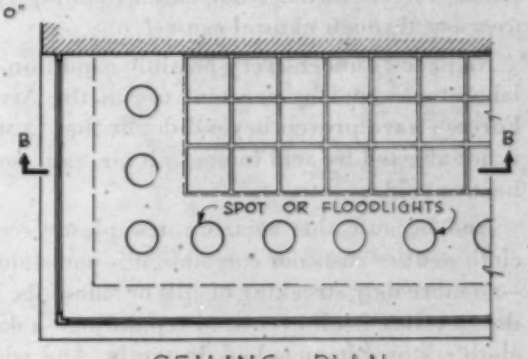


SECTION B-B

SCALE - ¼" = 1'-0"

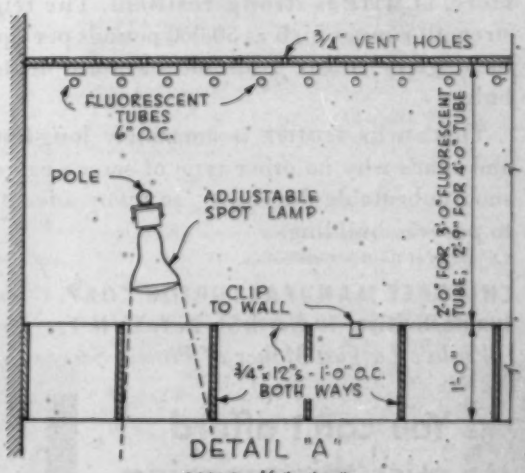


CEILING PLAN



CEILING PLAN

The egg crate ceiling shown above uses fluorescent tubes on six-inch centers to achieve high-intensity illumination. As illustrated in the alternate diagram, the egg crate and modified "Swiss-cheese" arrangement may be used together, permitting high-intensity illumination and high-lighting by spots. When only the egg crate ceiling is used, spot lighting fixtures should be placed forward in the window, shining towards the background. The height between the fluorescent tube and the egg crate is determined by the length of tube and the amount of space required for servicing.


¾" VENT HOLES
FLUORESCENT TUBES 6" O.C.
POLE
ADJUSTABLE SPOT LAMP
CLIP TO WALL
¾" x 12"s - 1'-0" O.C. BOTH WAYS
2'-0" FOR 3'-0" FLUORESCENT TUBE; 2'-9" FOR 4'-0" TUBE
1'-0"

DETAIL "A"
SCALE ½" = 1'-0"

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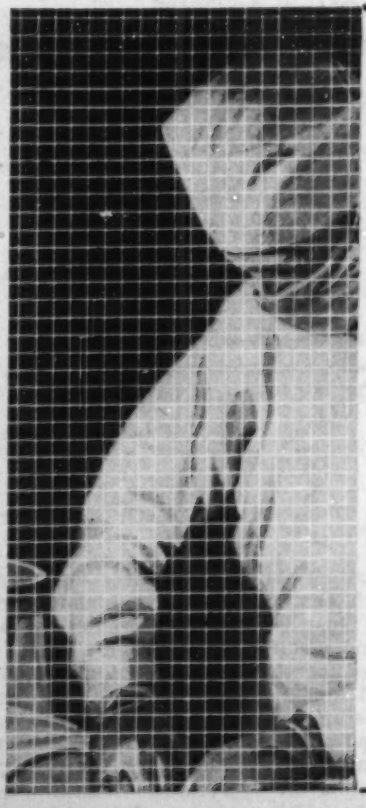

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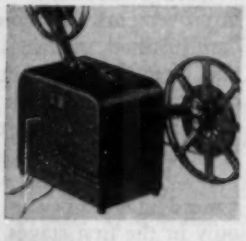

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Text by Samuel Gaillard Stoney. Charleston, S. C., The Carolina Art Assn., 1944. *6 by 9 in.* xiii + 141 *pp. illus.* $2.00.

Subtitled "A Survey of the Architectural Heritage of a Unique American City," this book is a graphic and interesting report on the work undertaken by the Charleston Civic Services Committee. In all, 1168 Charleston buildings were reported on and photographed, and subsequently classified as to value in five groups: (1) nationally important; (2) valuable to city; (3) valuable; (4) notable; (5) worthy of mention. Only the first four of these classifications are illustrated here.

It is interesting to note that the committee judged only 26 of the 1168 buildings "nationally important." Of these, 14 are dwellings, four are churches, seven are public buildings, and one is commercial.

Mr. Stoney traces the history of Charleston and comments briefly on some of the most memorable of its buildings. Further pertinent information such as dates of erection, notes on remodeling, current ownership and use of many of the buildings is given in the captions accompanying the photographs.

It is too bad that this is not the beautiful book it so easily could have been. But that, Mr. Stoney points out, was not its purpose. He describes the photographs as "memoranda . . . not works of art or even works of expert photography." This volume, in other words, is quite frankly a guide book, intended to point out to visitors and Charlestonians alike the city's architecturally and historically interesting structures. But even as a guide book it is disappointing as to photography and page layout. An art association surely could be expected to produce a more artistic volume.

REPORT OF THE URBAN PLANNING CONFERENCES

At Evergreen House, 1943. *Baltimore: The Johns Hopkins Press,* 1944. *6 by 9 in.* xix + 245 *pp. illus.* $2.75.

Held as a series of six full week-end sessions, the Urban Planning Conferences at Evergreen House in 1943 produced not only a number of excellent formal papers, but also a great deal of stimulating discussion, both of which are covered in this Report. Two of the addresses are of special interest to architects: "Future Aspects of Housing Construction," by Howard P. Vermilya; "The Postwar Housing Task," by Warren J. Vinton.

Mr. Vermilya opened his talk with a word of caution. "Many hoped-for improvements in housing," he said, "are justified and we may expect progress after the war, but we should not expect the immediate postwar house to be a radically different product. We must creep before we can walk. Many . . . developments, while in an advanced stage in war production, are only in the first stages of adaptation to peacetime purposes and needs."

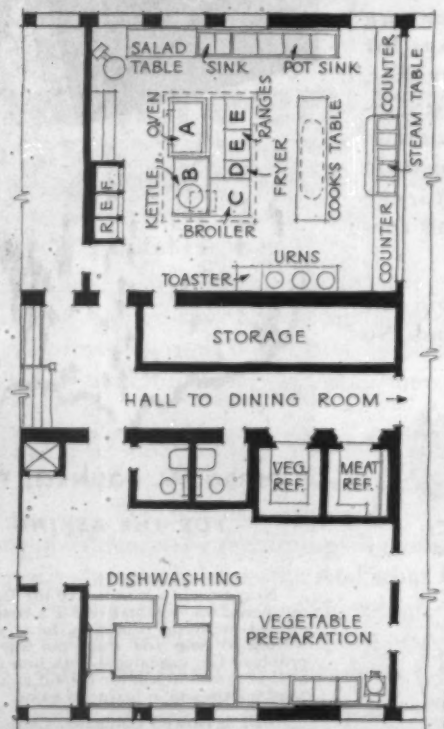
Stressing the need for lowering housing costs, Mr. Vermilya pointed to several ways in which it can and must be done: (1) stabilizing the rate of production by planning; (2) securing greater continuity in the production process and eliminating seasonal employment; (3) integrating the house building industry which at present is made up chiefly of many small contractors and few large organizations; (4) studying finance and taxes for possible savings in the costs of housing; (5) coordinating building codes.

"Unless a vigorous attack is made upon the problem of housing costs,

(Continued on page 114)

KITCHEN PLAN NO. 20: Twentieth of a series of successful mass-feeding kitchen plans.

The small kitchen illustrated in this kitchen plan of a mid-western military school is ideal for the combination roaster and baker. 350 students are served.



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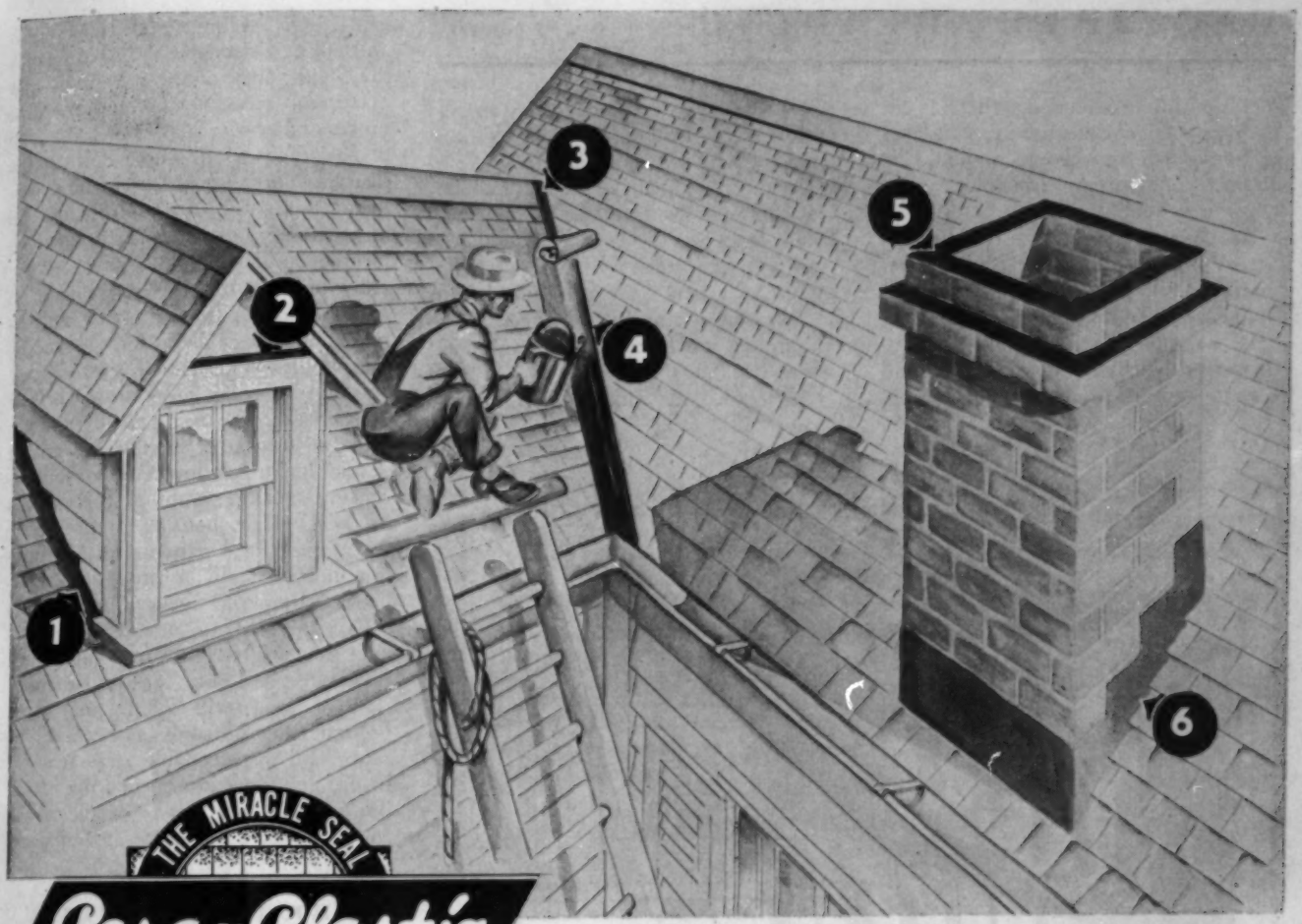

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REQUIRED READING (Continued from page 112)

Mr. Vermilya concluded, "there is little hope that we can raise the standards of housing to a level which should be attained or that we can make new housing generally available."

As chief economist of the FPHA, Mr. Vinton centered most of his remarks on the place of the government in the postwar housing picture.

"A comprehensive program of housing and urban redevelopment," he said —rather optimistically, perhaps—"once it got underway, would absorb an investment of around 12 to 13 billion dollars a year in residential areas. With such an investment of funds (which certainly will be available to us), we could clean up the very worst of our slums in five years. In ten years the picture of a new America would begin to take shape, and within fifteen years all families would have decent and adequate dwellings . . ."

Although Mr. Vinton looks to private funds "seeking reasonable profits and taking reasonable risks" to finance these vast undertakings, he finds that in several areas of the housing field private enterprise has not been, and is not likely to be successful: in the clearance of slums; in creating residential sites out of vacant land; and in providing adequate housing for low-income families.

Buying up of the slum areas, in Mr. Vinton's opinion, must be done by public agency, and the losses borne by the public. With the land made available under long term lease, private enterprise could then take over wherever the district is suitable for private development, but low-rent housing requiring subsidy would be the concern of local public housing authorities.

Vacant land, furthermore, Mr. Vinton thinks should be brought into urban use by public agency, and the sites leased or sold to private developers once they are ready for building. "Such public responsibility for the urbanization of land will insure that it is brought into use only as needed," he says, "and that available areas are used before new ones are opened up." Maybe so, but a great many people would consider that uncalled-for and unnecessary governmental control.

HOUSING MANUAL 1944

A Report by the Ministry of Health and the Ministry of Works. London, H. M. Stationery Office, 1944. 6 by 9½ in. 104 pp. illus. 2s. New York 20 (30 Rockefeller Plaza), British Information Services, 60c.

Another in the British series of publications on house design, this manual offers much useful information on housing and site planning, population density, standardization, new materials and methods, etc. There is an excellent section on plan arrangements, another on factory-made equipment; two appendices cover space standards and structural standards.

CATALOG DESIGN

By K. Lönberg-Holm and Ladislav Sutnar. New York 18 (119 W. 40th St.), Sweet's Catalog Service, F. W. Dodge Corp., 1944. 6 by 8¼ in. 71 pp. illus. $3.00.

In this attractive and colorful manual is a wealth of practical and timely information on catalog design. Nine case studies, varying from the simple to the complex product catalog, are presented, each with illustrations and diagrams. The applicability of the principles to a wide range of information forms is readily apparent.

Messrs. Holm and Sutnar stress new concepts of catalog function, new principles of design analysis and of directed visual flow. Particular attention is

(Continued on page 130)

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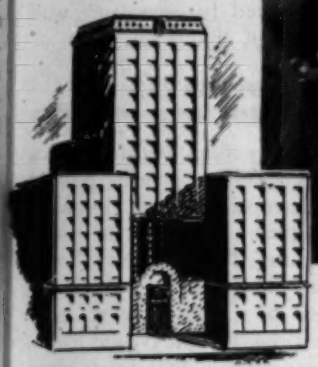
It's a long way we've come...



FROM the early caves of primitive man . . . from the grim elementary struggle for mere existence . . . to the luxurious comfort of our modern housing and appointments . . . *it's a long way we've come.*

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THE RECORD REPORTS *(Continued from page 12)*

from the big cities. However, government officials gather that urban real estate groups are afraid that airports will depreciate, not enhance, the values of their properties. They don't want them.

The highways to be built under the law passed last year, it is promised, will be like nothing that the average auto owner has ever driven over. For miles and miles there will be no crossings whatever, so that high driving speed will be conventional. Instead of crossroads, there will be elaborate under and over passes. The program even calls for special speedways through the large cities.

✦ ✦ ✦

WEST POINT COMPETITION

Major General Francis B. Wilby, Superintendent, United States Military Academy, has announced that the New York architectural firm of Delano & Aldrich won first place in the competition to select an architect for permanent building construction at the Military Academy in proposed building program. Shreve, Lamb & Harmon; Alfred Hopkins, Assoc.; and Skidmore, Owings & Merrill, all of New York, won second, third and fourth places respectively.

Judges for the contest were: General Wilby; Colonel R. G. Alexander, Chairman, Permanent Planning Board, U.S.M.A.; Harvey W. Corbett, New York architect; George Howe, Supervisor of Architecture, Treasury Department; Dr. Henry T. Heald, President, Illinois Institute of Technology; Leopold Arnaud, Dean of Faculty of Architecture, Columbia University, served as professional advisor.

The competition was authorized by the War Department and was under the direction of Colonel Edgar W. Garbisch, New York District Engineer. It was conducted in accordance with the standards of the A.I.A.

NEW METROPOLITAN HOUSING PROJECT

Another large-scale housing project, Peter Cooper Village, is being planned by the Metropolitan Life Insurance Co. for postwar erection in the notorious "gas house" district on New York's lower east side. Occupying the blocks immediately to the north of the same company's projected Stuyvesant Town, the new community will house about 6,000 persons.

The project will be undertaken under the provisions of the New York Insurance Law, designed to promote housing construction and to relieve unemployment. It will not be afforded the benefit of tax exemption.

The blocks bounded by First Avenue, East 20th Street, East River Drive and East 22nd Street, have been acquired by the company, Frederick H. Ecker, chairman of the board, reports, and negotiations are pending for the possible acquisition of an additional block east of Avenue A and North of East 22nd Street. According to Mayor LaGuardia, the city will propose to the Metropolitan that, in exchange for closed interior streets, property be transferred to the city for widening First Avenue and East River Drive and for bordering strips around the site area.

Under the plans as outlined, it is expected that the site will contain approximately 15 acres. At the present time the major portion of the area is occupied by the gas plants of the Consolidated Edison Co. and other industrial structures.

Mr. Ecker said that the new residential buildings will occupy approx-

(Continued on page 118)

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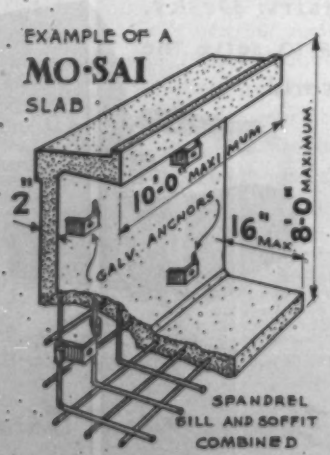

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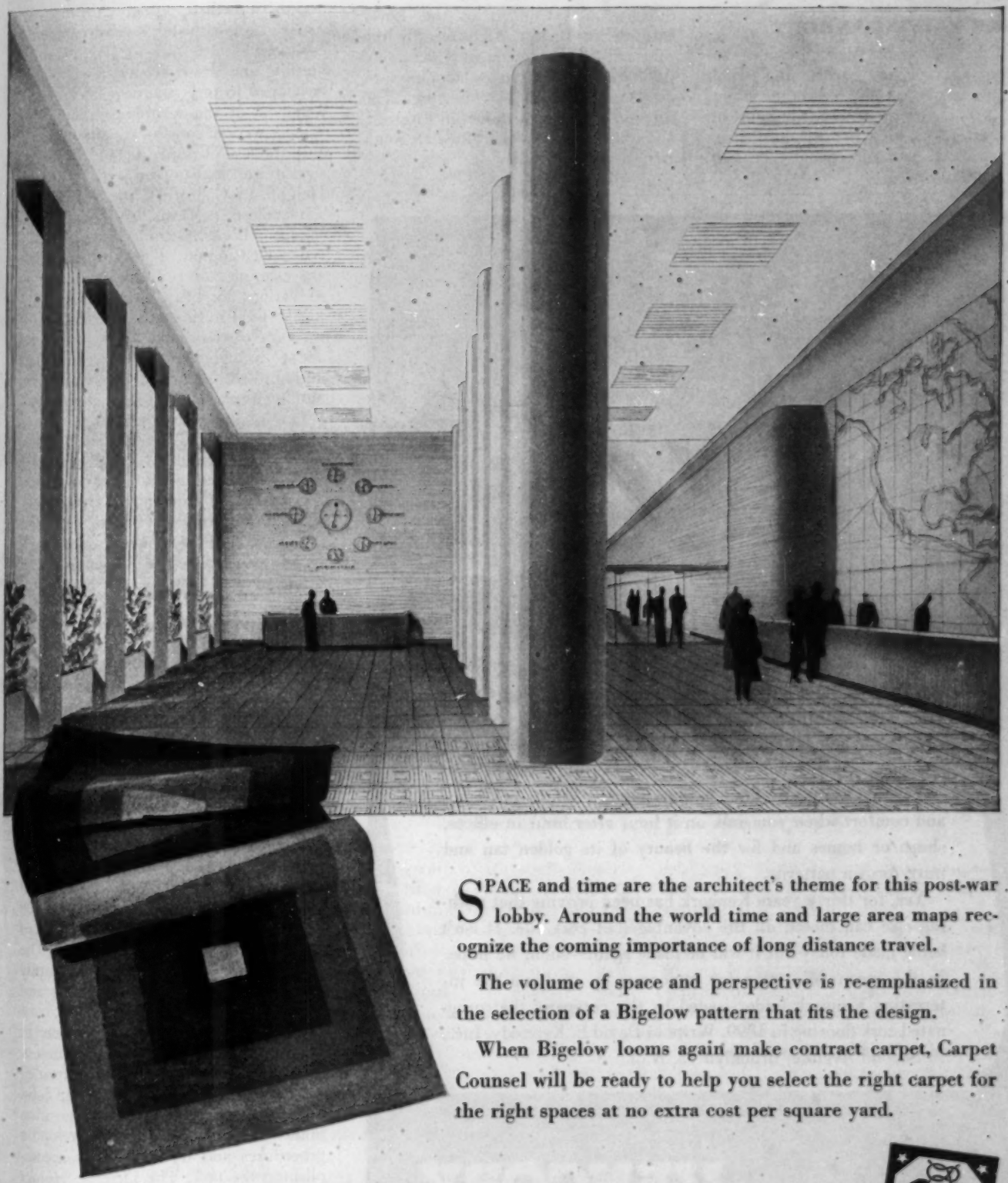

SPACE and time are the architect's theme for this post-war lobby. Around the world time and large area maps recognize the coming importance of long distance travel.

The volume of space and perspective is re-emphasized in the selection of a Bigelow pattern that fits the design.

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imately 27 per cent of the land, and that the greater part of the area will be given over to lawns, parks and play sections for children.

WAR HOUSING EXHIBIT

"The Lesson of War Housing," an exhibition dealing with the vital problems of war and peacetime housing, is on view at the Museum of Modern Art, New York, until February 25. It will subsequently be sent on tour throughout the country.

The exhibition is a new edition of the "U. S. Housing in War and Peace" exhibit prepared last year at the request of the Council of the Royal Institute of British Architects by the Museum's Department of Circulating Exhibitions with the collaboration of its Department of Architecture. The original edition was shown in England, and duplicates of it in Russia, South Africa and Australia.

The present exhibition, consisting of approximately 50 panels of photographs and photograph enlargements, drawings, plans and brief text, stresses the lessons for peacetime building and city planning which have been learned from wartime housing problems. It is divided into three sections, the first of which deals with our extensive prewar experience with large-scale, planned housing and shows the types of shelter developed to meet the new and crucial problems of the war emergency. The second section consists of photographs and models of some of the best designed war housing projects: Channel Heights in California, the Lake Jackson project in Texas, and housing at Windsor Locks, Conn., Coatesville and New Kensington, Pa. Also included are examples of community buildings in various localities.

The final section of the exhibit sums up some of the things we have learned about construction, job organization and land use, and social, administrative and political planning.

One of the most interesting features of the exhibition is a large chart showing comparative production schedules for (1) conventional frame construction; (2) site fabricated, frame construction; (3) factory fabricated, site assembly; and (4) factory fabricated, factory assembly. The advantages and disadvantages of each are listed.

NHA NOTES

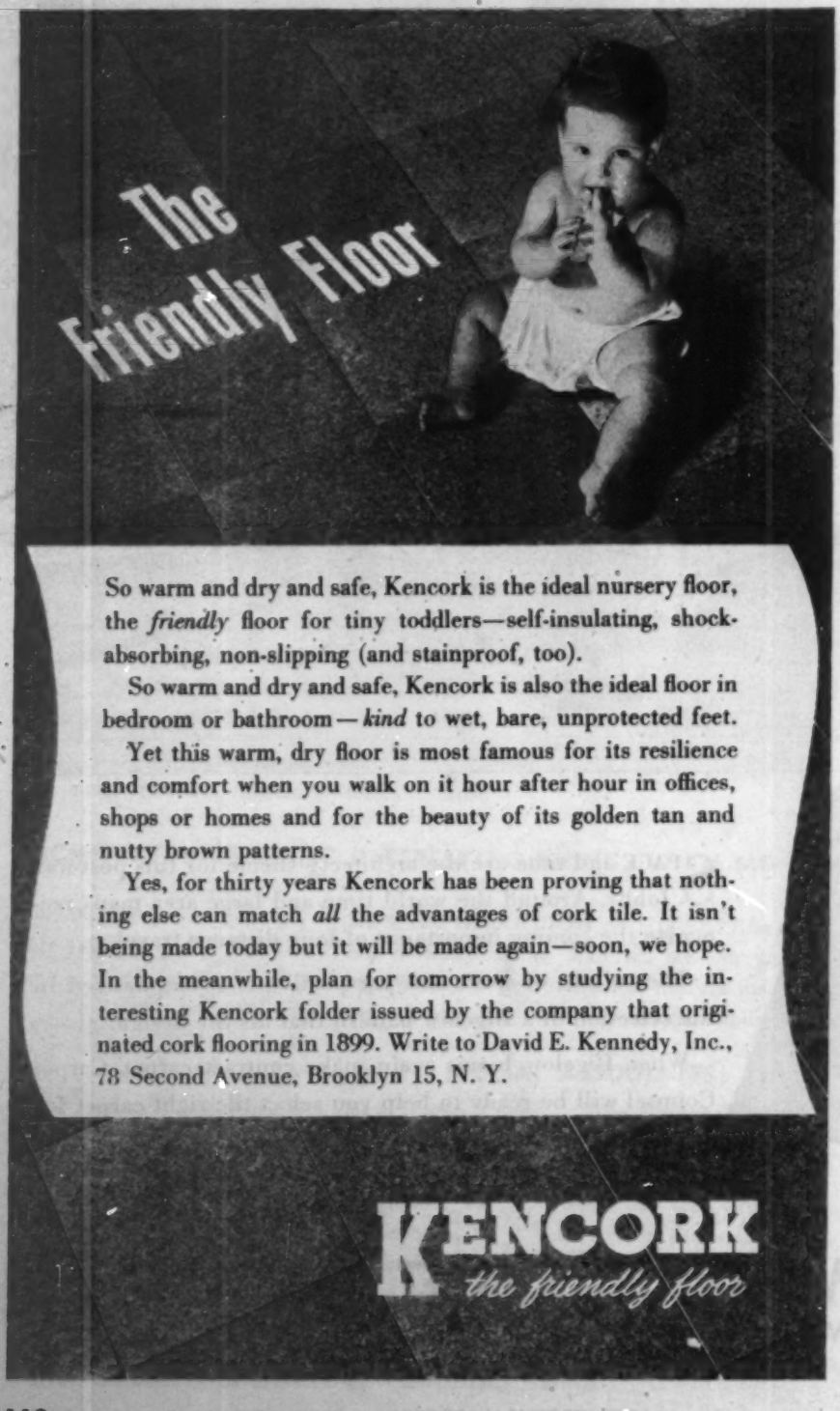
FPHA Year-End Report

The Federal Public Housing Authority entered the new year with 95 per cent of its war housing construction task completed, but it is still faced with a number of vitally important building jobs and the biggest civilian housing management assignment in history, Commissioner Philip M. Klutznick reports.

The FPHA has had the responsibility for the bulk of the publicly financed war housing program totaling 830,000 accommodations. Of these, 788,000 had been completed by October 31. The total program involved 583,000 family dwellings, 166,000 dormitory units and 81,000 stop-gap accommodations.

Looking toward the liquidation of the government's war housing investment when war production is curtailed and workers return to peacetime jobs, the FPHA established a disposition branch in 1944 and began developing procedures and techniques for accomplishing the task. The Defense Homes Corporation, operating under the FPHA commissioner, already has sold one of its large-scale developments for higher income war workers to an investment group and started selling in-

(Continued on page 120)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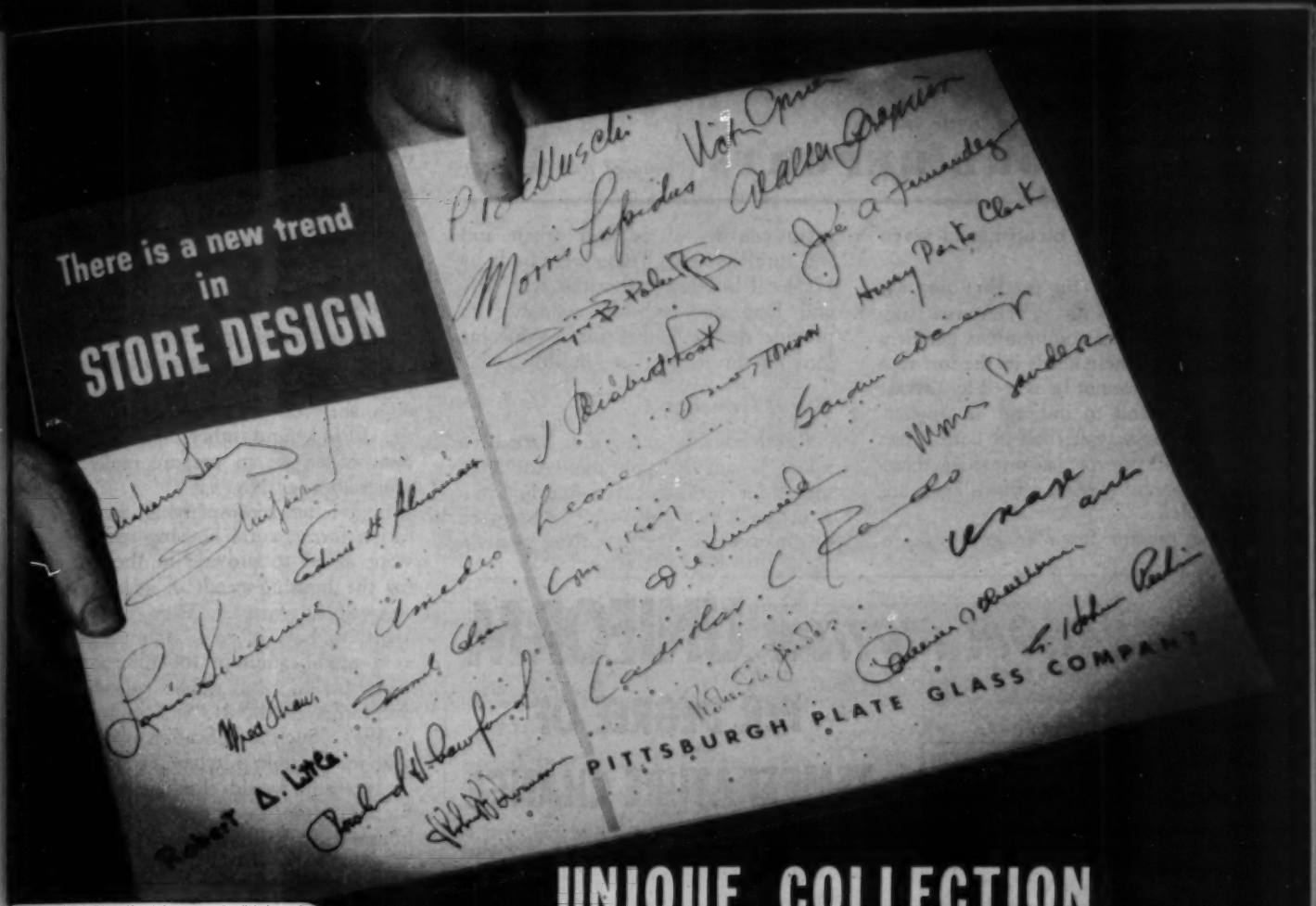

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dividual homes to occupants in seven other projects.

In preparation for meeting postwar housing needs, the FPHA has suggested that local communities get firm estimates of their needs in the low-rent field which cannot be served by private enterprise and to indicate, in applications for a postwar shelf of both urban and rural projects, a proposed three-year program if federal funds are made available.

The present low-rent housing program consists of 105,000 urban and 500 rural homes. These were built by 171 local housing authorities with federal loan and subsidy assistance to provide decent homes for low-income families formerly living in slums.

Rural Housing

Rural housing authorities have been asked to submit applications for allotments for rural low-rent housing construction which they will be prepared to undertake in the first three postwar years if federal funds are made available, the FPHA commissioner has also announced.

Urban housing authorities already had been requested to submit similar applications for low-rent slum clearance projects in cities. Together, the urban and rural applications will furnish the basis for low-rent housing programs to be recommended as part of a shelf of postwar projects which the FPHA and other agencies have been called on to prepare under Executive Order No. 9384.

In a letter accompanying the application forms, rural housing authorities were asked to provide in their plans for the housing needs of small towns as well as farms. They were also asked to bear in mind the possibility of a modification in the present plan of supplying rural public housing under terms of the U. S. Housing Act of 1937. Such modification would provide for possible purchase of houses by tenants and would eliminate the need for acquiring title to the land on which houses may be built.

Housing Needs

Construction of a total of 12.6 million non-farm dwelling units during the first 10 years after the war is the estimate of the NHA in a bulletin, "Housing Needs," recently issued.

"In terms of 1944 prices," the bulletin states, "about one-third of the units will be needed at rentals under $30 per month; another third will be needed to rent from $30 to $49, or for sale at prices between $3,000 and $4,999; and the remaining third will be needed to rent for $50 or more, or for sale at $5,000 and over."

CHANGES IN HOUSING ACT RECOMMENDED

Seven changes in the National Housing Act, designed to strengthen the Federal Housing Administration after the war, have been recommended by the Residential Committee of the Producers' Council.

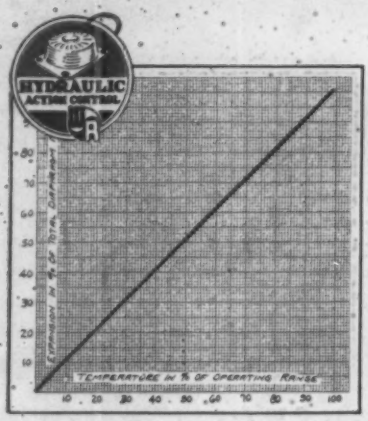
"The purpose of the changes is to assure a sound fiscal basis for the operations of the FHA and to pattern its services so as to meet the new conditions of the postwar period," Irving W. Clark, chairman of the Council's committee, explains.

"Section 203 of the Act should be changed to provide equal treatment in the insuring of mortgages on both new and existing residential construction, especially so far as down payment requirements are concerned. In this connection, the Council previously recommended that mortgages on single-family, owner-occupied dwellings should be permitted in amounts

(Continued on page 122)

DIAPHRAGM MOTION UNIFORM

★ PER DEGREE OF TEMPERATURE CHANGE



Notice, in the diagram at the left, how the expansion of the Hydraulic-Action diaphragm actually draws a straight line across the chart. This is because the force exerted by expansion or contraction under heat or cold is always *uniform*, and always predictable. That's another reason why White-Rodgers controls are easier to install and free of trouble.

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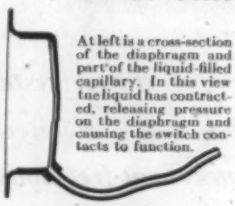
HERE'S HOW HYDRAULIC-ACTION GIVES *UNIFORM* EXPANSION



At left is a cross-section of the diaphragm and part of the liquid-filled capillary. In this view the liquid has contracted, releasing pressure on the diaphragm and causing the switch contacts to function.

CONTRACTED

The solid-liquid charge of Hydraulic-Action provides uniform expansion and *uniform* motion of the diaphragm, as shown in the accompanying illustrations.

In this cross-sectional view, the liquid charge of the capillary has expanded with a rise in temperature. The positive force of this hydraulic action forces the diaphragm outward and causes the switch contacts to function.

EXPANDED

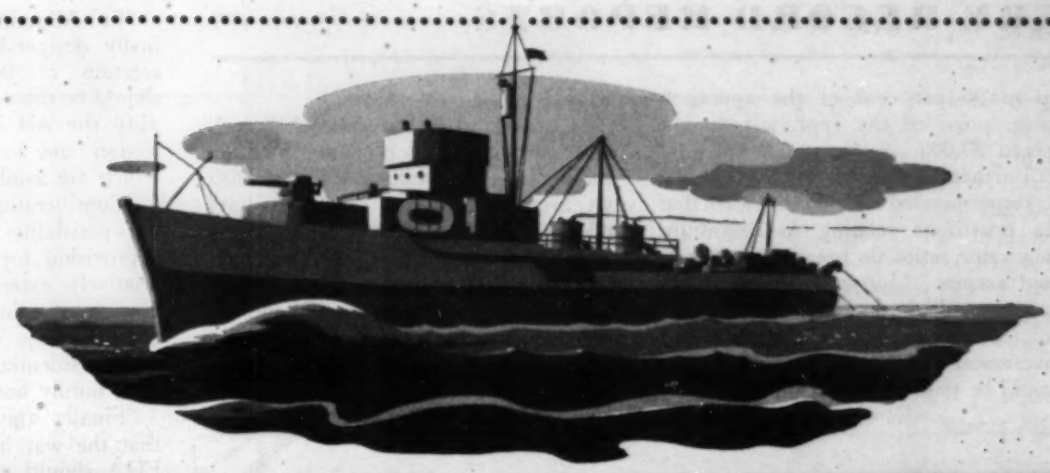
Illustration of the White-Rodgers diaphragm body, the actuating element of every White-Rodgers temperature control. It is so designed as to exert FULL pressure at the point of contact with the switch mechanism.

WHITE-RODGERS ELECTRIC CO.

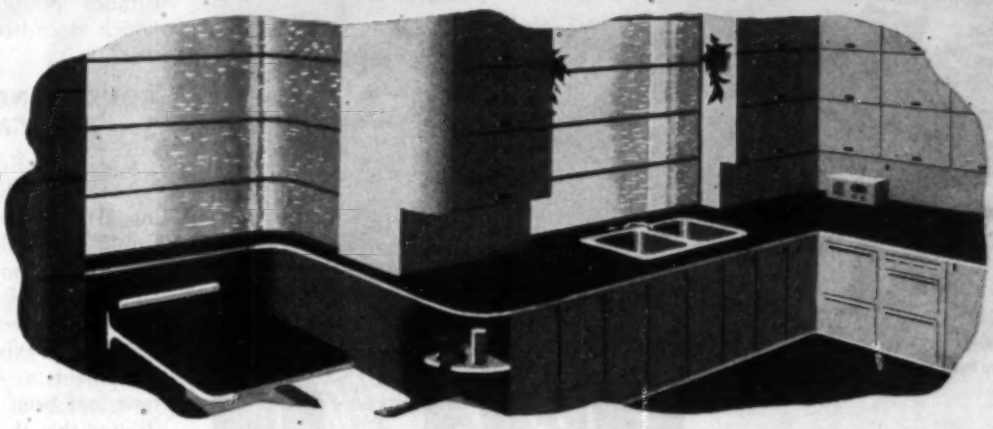
1202B CASS AVENUE ST. LOUIS 6, MISSOURI

Controls for Refrigeration • Heating • Air-Conditioning

W-R



Whether you build Minesweepers or design Kitchens . . .



....your product can be improved with a Kimpreg* Surface

A revolutionary new alloy-like material is achieved by fusing to plywood's surface a cured plastic skin of KIMPREG. This resultant material is not a plywood in the ordinary sense, not a conventional plastic laminate. It is a brand new, better structural medium with countless applications in many products—including, very probably, those *you* plan for post-war production.

With KIMPREG, plywood is converted into an improved substance which can be machined, formed and fastened like ordinary wood—yet has a plastic's smooth, tough surface and beautiful, permanent, paintless finish.

KIMPREG adds the following advantages to plywood: 1, increases durability and flexural strength; 2, provides resistance to moisture and vapor; 3, armor-plates against extreme abrasion; 4, prevents surface checks; 5, diminishes grain-raising effects; 6, makes the material scuffproof, splinterproof, snag-resistant; 7, affords a stainproof, washable, "wipe clean" surface; 8, creates resistance to chemical action, decay, temperature extremes, fire, vermin, and mold. Moreover, it is warm to the touch, does not have the chill "feel" of metal surfaces.

Today all KIMPREG is required for military needs, ranging from airborne "prefab" huts to glass-smooth tables for packing parachutes without snagging. Hence, the wartime color of KIMPREG is a soldierly olive-drab. Post-war, however, it will be offered in a variety of appealing hues.

Now is the time to investigate the possibilities of KIMPREG-surfaced materials for your *peacetime* requirements.

*Kimpreg (trade-mark) means Kimberly-Clark Plastic Surfacing

Kimpreg
TRADE MARK

A PRODUCT OF Kimberly Clark RESEARCH

Among the users of KIMPREG are: Buffelen Lumber & Manufacturing Company; Olympic Plywood Company; Washington Veneer Company; and The Wheeler, Osgood Company; all of whom are currently producing a Douglas Fir Plywood surfaced with KIMPREG. This product is sold under the trade name of Inderon.

Send Coupon for FREE KIMPREG Book to:
Kimberly-Clark Corporation, Neenah, Wis.

AR-245

Name _____

Firm _____

Type of Business _____

Address _____

City _____ State _____

up to 90 per cent of the appraised value, provided the appraisals do not exceed $7,000.

"Further amendment of Section 203 is recommended to make clear that the provisions relating to maximum loan value ratios do not apply to leasehold estates. Mortgages on leasehold estates would be eligible for insurance only when there is a bona fide cash investment equal to the amount which would be required if the property were owned outright.

"Class 1 and 2 provisions of Title I, which covers modernization and repair, should be modified to establish an average premium rate at a level adequate to meet all the losses arising from legitimate claims, thereby making Title I self-supporting, and FHA should clearly set forth specific and detailed descriptions of the conditions and characteristics of claims which it will accept.

"In addition, Class 3 provisions originally designed to make possible the erection of very modest dwellings should be discontinued in order to simplify the Act and to afford the protection and lower monthly payments which are available under Section 203.

"Consideration should be given to the possibility of including in Title I provision for substantial loans with relatively extended maturities to encourage the financing of remodeling, reconversion, major additions, and small residential accommodations other than family homes.

"Finally the Council recommends that the war housing program of the FHA should not be extended beyond the period of the war. Thus, Section 603 of Title VI should not be continued, although provision should be made for the conduct of the operations made necessary by reason of the insurance of war housing mortgages which extend beyond the period of the war."

HOUSING NEWS

New York City

Chairman Edmond B. Butler has announced that the New York City Housing Authority has applied for federal funds to build 16 low-rent public projects to house 19,300 families at an estimated development cost of $132,500,000. Three of these will be extensions to existing federally-aided developments. Although definite sites have not been selected, Mr. Butler indicated that the new projects would be located throughout the five boroughs.

Philadelphia

Confronted, like every other large city, by a severe housing shortage, Philadelphia's Housing Association has issued a statement outlining a 14-point housing program:

1. Zoning should be strengthened by provision for elimination of nonconforming uses over a period allowing for due amortization.

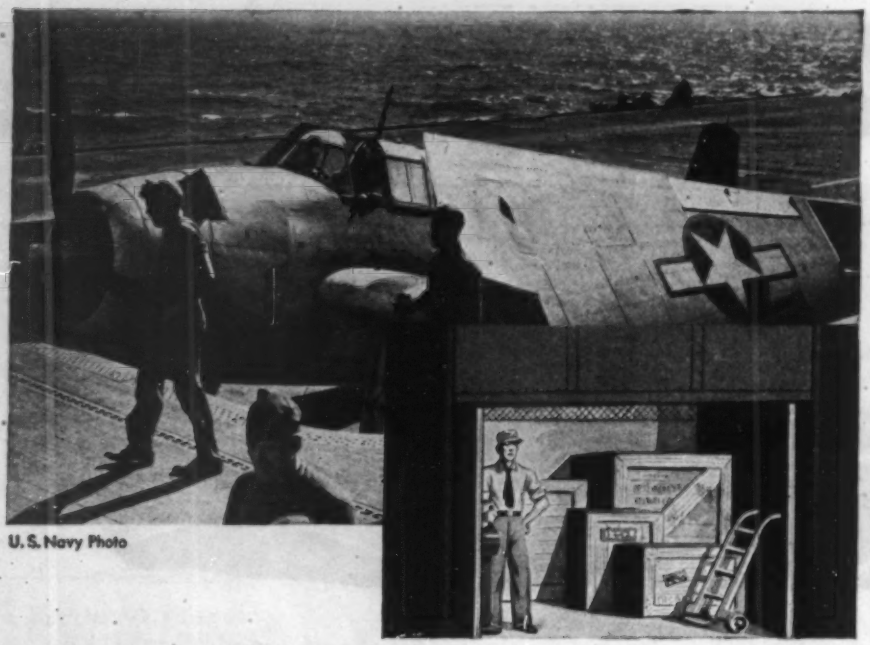
2. Municipal agencies should acquire tracts of land for schools, parks, playgrounds and other municipal uses, well in advance of the actual development of new neighborhoods.

3. Subdivision control should be installed throughout the area, and wherever possible the gridiron street pattern should be replaced by new street plans in keeping with modern standards of land development.

4. Private enterprise and private investment should and can provide the overwhelming majority of the new buildings that will be built in the Philadelphia area in the next five years.

5. The Building Code should be modernized to permit regulation on the

(Continued on page 124)



U. S. Navy Photo

LIFTING PLANES TO FIGHT TODAY
MOVING MEN AND MATERIAL TOMORROW

On many aircraft carriers Sedgwick airplane elevators lift and lower fighting planes. These elevators, with capacities of more than 85,000 pounds, operate under the most adverse conditions. They have to be tough. Yet they must be precise... delicately balanced to line up flush with the lips of the flight deck—*always.*

Wartime research, engineering and manufacturing experience plus more-than-50 years' experience designing, manufacturing and installing elevators and dumb waiters will result in many improvements in Sedgwick's peacetime products.

When material is available and peacetime manufacturing is resumed, Sedgwick will make Electric Elevators—for freight, hospital, residence and sidewalk service; and stair-travelors. Electric Dumb Waiters—traction type and Roto-Waiters. Hand Power Elevators—for freight, hospital, invalid and sidewalk service. And a complete line of Hand Power Dumb Waiters.

If you are confronted by perplexing lifting and lowering problems—present or postwar—*tell us about them.* Our engineers will be happy to help work out the solution and show you how Sedgwick Electric and Hand Power Elevators and Dumb Waiters move men and material better and faster—*at reduced cost.*

We would like to reserve your copy of our new booklet "Standard Specifications of Sedgwick Elevators and Dumb Waiters." Write on your company letterhead—tell us how many you want—and we will make certain you receive your copy or copies as soon as they come off the press.

"MEN WHO KNOW ARE SOLD ON SEDGWICK"

Sedgwick MACHINE WORKS, INC.
142 WEST 15th STREET NEW YORK 11, N. Y.
Since 1893 designers and manufacturers of specialized lifting equipment
ELEVATORS • HOISTS • ROTO-WAITERS • MATERIALS HANDLING EQUIPMENT

FARADAY

THE HOUSE OF SIGNAL SERVICE SINCE 1884

Announcing...

the acquisition by the Faraday Electric Corporation of the signal systems business of the Holtzer-Cabot Electric Company of Boston

Combining this old established signal systems business with our Stanley & Patterson Division will result in the widest and most complete line of signal systems equipment in the country.

The rigid standards of efficiency and quality and the high type of service which have been established by each of these organizations in the past will, of course, be maintained in the future. Manufacturing will be done in Adrian, Michigan and Boston, Massachusetts.

STANLEY & PATTERSON DIVISION

OF FARADAY ELECTRIC CORPORATION · ADRIAN, MICHIGAN

DISTRICT OFFICES IN: ATLANTA • BIRMINGHAM • BOSTON • CHICAGO • CLEARWATER • CLEVELAND • DALLAS • DENVER DES MOINES • KANSAS CITY • LOS ANGELES • MEMPHIS • MINNEAPOLIS • NEW ORLEANS • NEW YORK • PHILADELPHIA • PITTSBURGH RICHMOND • ST. LOUIS • SAN FRANCISCO • SALT LAKE CITY • SEATTLE • WASHINGTON • IN CANADA: BURLEC LIMITED, TORONTO 13.

basis of performance standards.

6. Private enterprise should put greater reliance on technical skill in the preparation of site and house plans. The FHA should encourage this type of development by lengthening the amortization period and lowering insurance premiums for well-planned and solidly built houses in well-planned and permanently protected neighborhood developments.

7. The housing market should be widened by a reduction in housing cost through lowering the interest rate.

8. In the interests of stability of home ownership, equity payments should not be further reduced, and provision should be made for pre-payments as well as for deferred payments of mortgages.

9. The consumer should be educated to a thorough understanding of the difference between the initial cost of shelter and the annual cost.

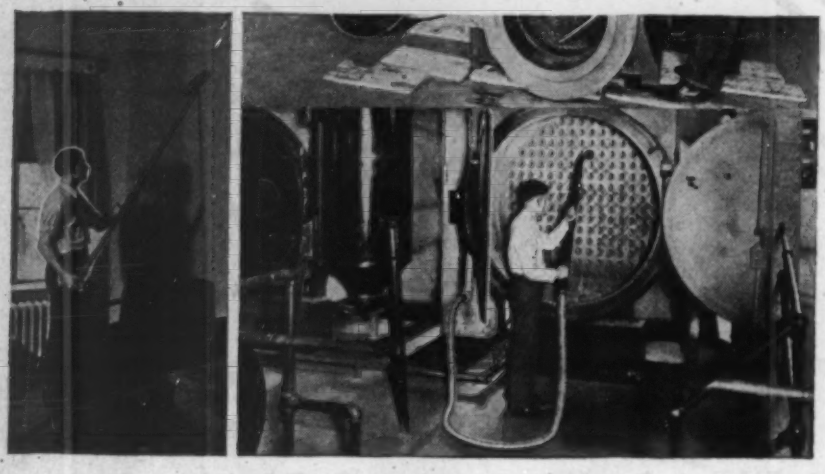
10. Insurance companies and savings banks should be permitted to employ a limited percentage of their assets for the construction of soundly planned rental housing.

11. Public housing for families in the lowest income group must be continued; increased provision should be made for the housing of large families.

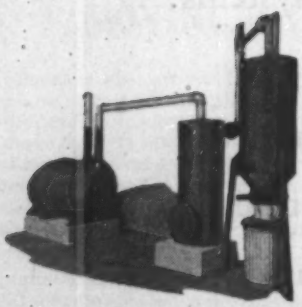
12. Local housing authorities should prepare plans for postwar projects; because of the shortage of housing which will continue in the postwar period these projects cannot involve the demolition of habitable dwellings.

13. The trend toward greater payments in lieu of taxes by housing authorities to local governments should continue.

14. Housing of all types, including new housing, both for sale and for rent, should be made available for Negroes.



Cleans THE MOST DELICATE DECORATIONS AND THE DIRTIEST BOILERS



The vacuum producer and dirt container are located in the basement. Piping connects to convenient inlets all over the building.

For a quarter of a century, Spencer Central Vacuum Systems were installed primarily to clean floors.

Special tools, easily manipulated on all kinds of floor surfaces, backed up by powerful vacuum, resulted in faster, better cleaning at lower ultimate costs.

In the meantime, other uses have become dominant in the minds of architects and building superintendents. Spencer cleans radiators, filters, and boiler tubes, and often saves its cost on these items alone in a few years.

In every kind of building it does something special—an extra dividend at no extra cost. In schools, its chalk trays; in theatres, projection machinery; in hotels, rugs; in stores, its displays, and in hospitals, dry mops.

Let us give you reasons why Spencer Vacuum Cleaning will result in a better cleaned building at less cost in the long run.

SPENCER HARTFORD VACUUM CLEANING

THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

256F

HOSPITAL CONSTRUCTION

Preparing for postwar hospital construction estimated at $1,193,133,985, the American Hospital Association is endeavoring to learn the names of all architects experienced in hospital design.

Through a questionnaire which will be sent to all architects it is able to identify as having had primary responsibility for hospital design, the Association hopes to compile data on men of this specialized experience, including names of not more than 10 hospitals erected from their plans.

The association's estimate on contemplated hospital work is based on reports from 1,683 hospitals obtained in a survey conducted by John N. Hatfield, chairman of its Council on Governmental Relations. These reports were received from a broad cross-section of the hospital field, ranging from a 10-bed hospital planning to spend $30,000 to a 1500-bed institution anticipating a $2,000,000 plant expansion program.

Architects experienced in hospital design who wish to receive the questionnaire may address the American Hospital Association through George Bugbee, executive secretary, 18 E. Division St., Chicago 10, Ill.

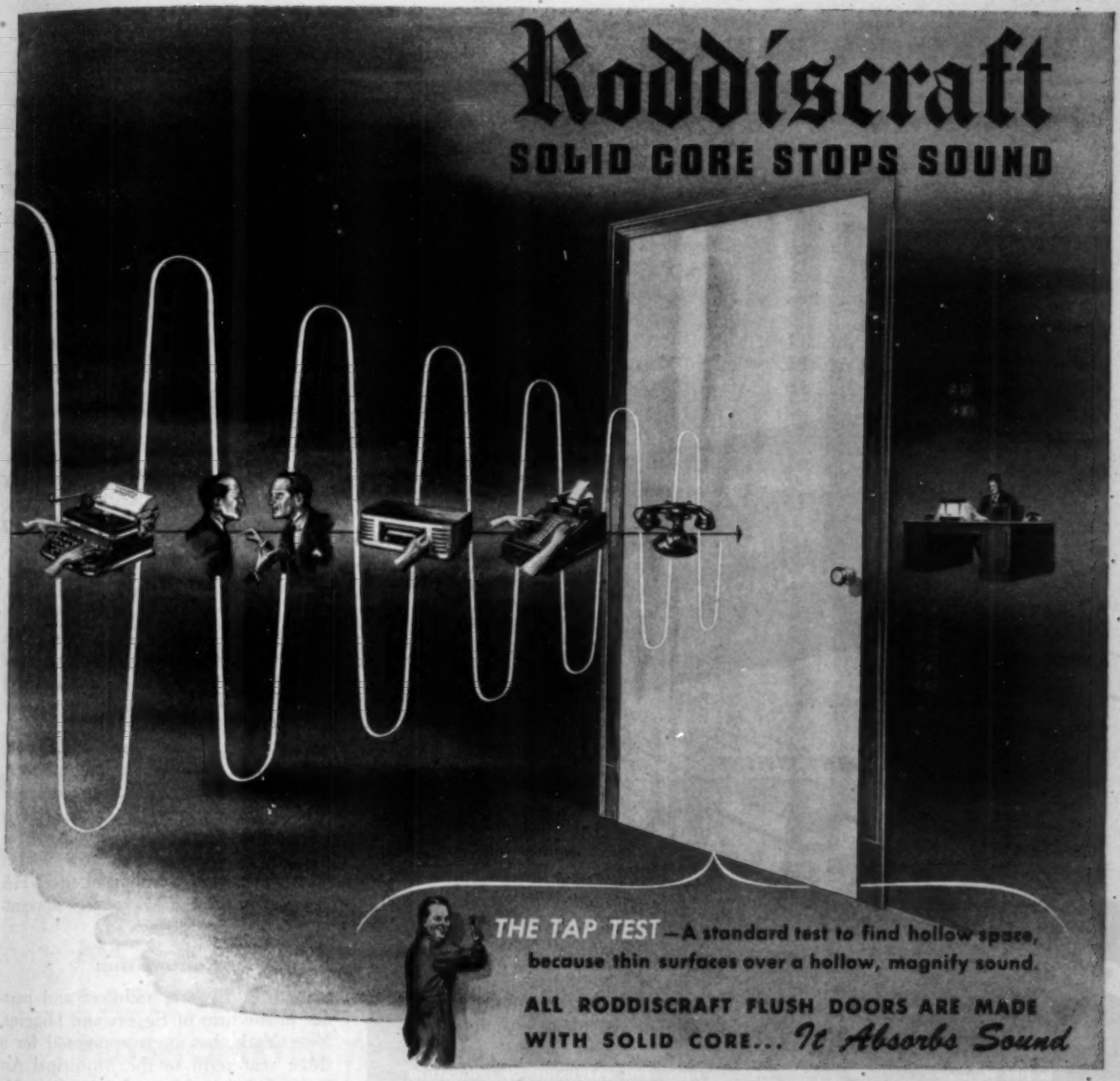
AN APPEAL FROM CAMP CARSON

The following appeal has been received from the Army Service Forces, 7th Service Command:

"A Home Building and Planning Course is being prepared for returning war veteran patients at Camp Carson, Colo.

"The instruction is patterned after civilian Home Planning Institutes. Additional information concerning actual

(Continued on page 126)


Roddiscraft
SOLID CORE STOPS SOUND
THE TAP TEST—A standard test to find hollow space, because thin surfaces over a hollow, magnify sound.
ALL RODDISCRAFT FLUSH DOORS ARE MADE WITH SOLID CORE... It Absorbs Sound

● Hotels, hospitals, apartments, and office buildings — all are designed today to minimize sound. . . . But what price sound-proofing walls and ceilings, when doors largely nullify the investment?

RODDISCRAFT Solid-Core Flush Veneer Doors combat sound in three ways—

1—They defeat the passage of sound with a solid softwood core — overlaid with crossbanding and face veneer — five thicknesses of wood which absorb sound and offer high resistance to its passage.

2—Soundless closing and opening without binding is characteristic of the RODDISCRAFT door because RODDISCRAFT construction permanently seals out moisture which results in warping and swelling.

3—The Solid Core, welded to the cross band veneer, eliminates the "drumming" inherent in doors of hollow-core construction.

Roddis backs all doors made according to its standard construction, with a two-year Guarantee Bond, unqualifiedly guaranteeing materials and workmanship — and the red-white-and-blue dowel, permanently identifying the door as RODDISCRAFT — two exclusive Roddis features.

Roddiscraft

WAREHOUSES

CAMBRIDGE 39, MASS., 229 Vassar St.
CHICAGO 8, ILL., 1440 W. Cermak Rd.
CINCINNATI 2, OHIO, 457 E. Sixth St.
DALLAS, TEXAS, 2615 Latimer St.
KANSAS CITY 8, MISSOURI, 2729 Southwest Blvd.
LOUISVILLE 10, KENTUCKY, 1201-5 S. 15th St.
LONG ISLAND CITY, N. Y., Review and Greenpoint Ave.
MARSHFIELD, WISCONSIN
MILWAUKEE 8, WIS., 4601 W. State St.
NEW YORK CITY 18, NEW YORK, 515 W. 36th St.
SAN ANTONIO, TEXAS, 727 N. Cherry St.

DEALERS IN ALL PRINCIPAL CITIES

See Sweet's Architectural File for complete door line and specifications

FROM TIMBER TRACT TO BUILDING SITE—
It's Roddis all the Way!

Roddiscraft
Roddis Lumber & Veneer Co.
MARSHFIELD, WISCONSIN

 (Continued from page 124)

building construction details, model making and farm buildings, will be taught.

"From publishers, manufacturers and readers, literature and other instructive material would be appreciated on the following subjects: House and Farm Building Plans; Household Fixtures and Appliances; Home Furnishings and Decorations; Financial; Building, Materials, Hardware, Landscaping, Paints, and Home Planning Articles.

"Forward all material to N.C.O. Director: S/sgt Vernon M. Krainbill, Reconditioning Craft Shop, ASF Convalescent Hospital, Camp Carson, Col."

APPOINTMENTS

Bennett to Yale

Richard Marsh Bennett, A.I.A., has been appointed professor of design in the Department of Architecture of the Yale School of the Fine Arts, President Charles Seymour of Yale University has announced. The appointment became effective on February 1.

Mr. Bennett was assistant professor of architecture at Yale from 1940 through 1943. During the past year he has been privately employed as an adviser on industrial design and art policy. He was formerly a member of the faculties of Vassar College, Columbia University, Rensselaer Polytechnic Institute and Pratt Institute.

Nedved Wins Milwaukee Post

Rudolph J. Nedved has been appointed Executive Director for the Housing Authority of the City of Milwaukee, and has already taken up his new duties.

Mr. Nedved won the appointment through a competitive examination staged by the Milwaukee City Service Commission. There were 67 applicants.

A native of Czechoslovakia, Mr. Nedved is a graduate in architecture of the Armour Institute of Technology and a veteran of the last war. In 1923 he won the Chicago Architects' Club foreign traveling scholarship and spent 13 months in Europe studying housing. Upon his return to this country he taught architectural design at Armour and the Art Institute, Chicago. Following a period of private practice, he served with the Rural Resettlement Administration, the FSA, the USHA and the NHA. He was Chief of the Site and Dwelling Standards Section in the Technical Division of the NHA until accepting the Milwaukee appointment.

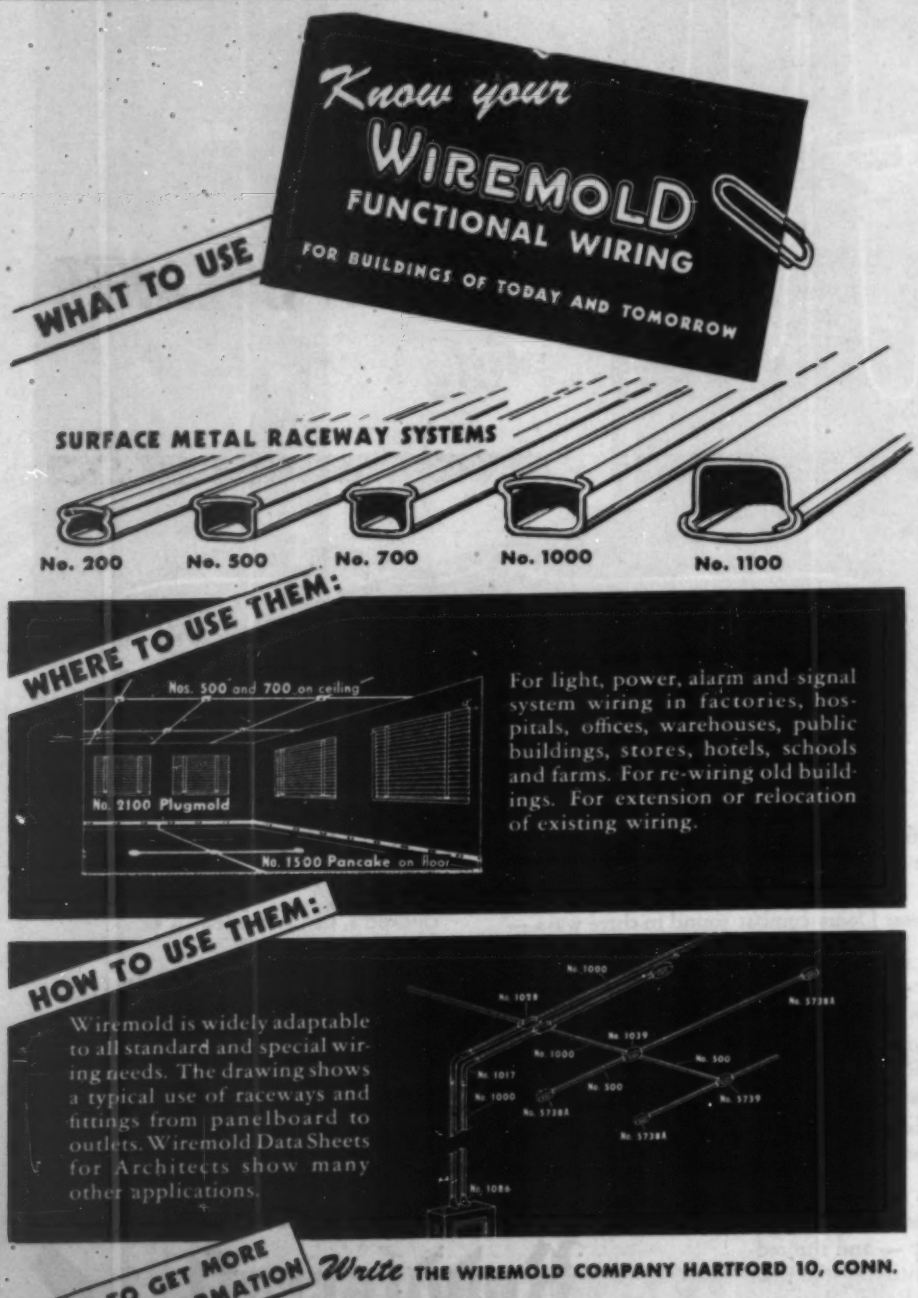
Eggers on Commission

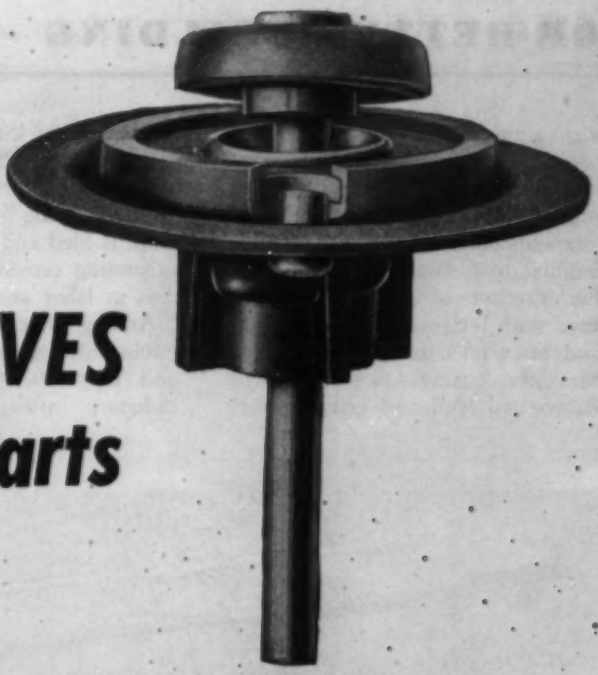
Otto R. Eggers, architect and partner in the firm of Eggers and Higgins, New York, has been appointed for a three year term to the Municipal Art Commission by Mayor LaGuardia. He succeeds Archibald Manning Brown as the architect member of the Commission.

DUTCH BUILDING SOS

A request for 7,000 tons of vitally needed building materials to repair an estimated 100,000 war-damaged homes in the liberated regions of Holland has been made to allied authorities by the Netherlands Civil Affairs Organization, Anets, Netherlands News Agency, has reported.

In order to make these houses reasonably safe again, and to provide the occupants with some protection from the elements by furnishing at least one room in each house with windows, the following materials will be needed: 1,190,000 sq. yd. of plywood; 1,785,000 sq. yd. of asphalt paper; 11,867,000 sq. yd. of glass; 20,000,000 tiles; 10,000,000 bricks; 4,400,000 lb. of bauxite; 1,100,000 lb. of putty.


Know your
WIREMOLD
FUNCTIONAL WIRING
FOR BUILDINGS OF TODAY AND TOMORROW
WHAT TO USE
SURFACE METAL RACEWAY SYSTEMS
No. 200
No. 500
No. 700
No. 1000
No. 1100
WHERE TO USE THEM:
Nos. 500 and 700 on ceiling
No. 2100 Plugmold
No. 1500 Pancake on floor
For light, power, alarm and signal system wiring in factories, hospitals, offices, warehouses, public buildings, stores, hotels, schools and farms. For re-wiring old buildings. For extension or relocation of existing wiring.
HOW TO USE THEM:
Wiremold is widely adaptable to all standard and special wiring needs. The drawing shows a typical use of raceways and fittings from panelboard to outlets. Wiremold Data Sheets for Architects show many other applications.
HOW TO GET MORE DETAILED INFORMATION
Write THE WIREMOLD COMPANY HARTFORD 10, CONN.
SEE OUR CATALOG IN SWEET'S
The Wiremold Wiring Guide, Bulletins and Engineering Data Sheets are designed to give the architect all the information he needs. We will be glad to send you these helps without obligation. Write us.



DELANY FLUSH VALVES
Have Only 6 Moving Parts

DELANY No. 50 VACUUM BREAKER
Has Only One Moving Part

ASSURING THE SIMPLEST, MOST EFFICIENT, AND EASIEST TO MAINTAIN FLUSHOMETER ASSEMBLY — with full protection against back syphonage and resulting water contamination.

Send for folder F

DELANY FLUSH VALVES ARE NOW MADE OF BRASS

SINCE 1879

Coyne & Delany Co.

BROOKLYN N.Y.

 (Continued from page 22)

of the National House and Farm Assn., 230 West 41st Street, New York City. Produced by Percy Brower, advertising consultant to builders and developers, the show includes exhibits by a number of leading manufacturers.

The exterior of the bungalow is painted with "self-washing" paint, and the interior trim is finished with washable white enamel paint. Colorful plastic coated wall and ceiling panels are used in the kitchen; window screens are plastic, window shades washable. There is a television screen over the fireplace in the living room. The bathroom is tiled and plastered with a new expanding cement said to save 50 per cent in labor and material.

Among the exhibits are plastic doorknobs and light fixtures, plastic tubing and pipe fittings, an electric steam radiator, insulating materials, glass block, and a cross section of steel frame prefabrication.

ALUMINUM WINDOWS

Nine double hung and eight casement styles of aluminum windows in stock sizes are planned for quantity production by a newly formed company (a subsidiary of General Bronze Corp.) as soon as government restrictions on residential building are lifted. Specifications call for built-in stainless steel weather-stripping, seamless tubular construction and welded joints. Hardware is to be chrome-plated nonferrous material. A protective coating of clear lacquer will be applied before shipment from the factory. The Aluminum Window Corp., 34-15 Tenth St., Long Island City, N. Y.

GLOW LAMP

A new type of glow lamp, about the size of an average marble, is said to put out continuously more light than a quarter watt neon glow lamp with an energy input that in a year's continuous burning does not add up to one kilowatt hour. In a year, at average domestic power rates, it will consume less than three cents' worth of energy.

The glow lamp actually is a miniature fluorescent lamp. A discharge takes place in a rare gas and the resulting radiation (invisible) is converted by phosphors on the inner walls of the bulb into a soft green glow. A tiny resistance in the miniature screw base serves as ballast.

At present made only in 1/10 watt size, the lamp may possibly be made in larger sizes up to one watt, for use as markers and indicators on panels and other industrial applications. Not available to civilians until after the war. Westinghouse Electric & Mfg. Co., P.O. Box 1017, Pittsburgh 30, Pa.

FLUORESCENT LIFE RATINGS

The lamp department of General Electric announces that new life ratings are now in effect on G-E Mazda fluorescent lamps, based on life tests which have been made with lamps operating on 3, 6 and 12-hour cycles.

Former ratings have been based on the assumption that lamps are burned approximately 3 hours per start. When the average number of burning hours per start is longer than that, longer over-all life results and the new ratings recognize this fact.

GREASE INTERCEPTOR

A new low-cost grease interceptor, the *Stop-All*, is made of cast iron with baffles cast in place. Large 1½ in. tapped openings make it easy to install; wing nuts on cover make it easy to clean. Furnished with gray finish. Wade Mfg. Co., Elgin, Ill.

Barcol OVERdoor
with ELECTRIC OPERATOR

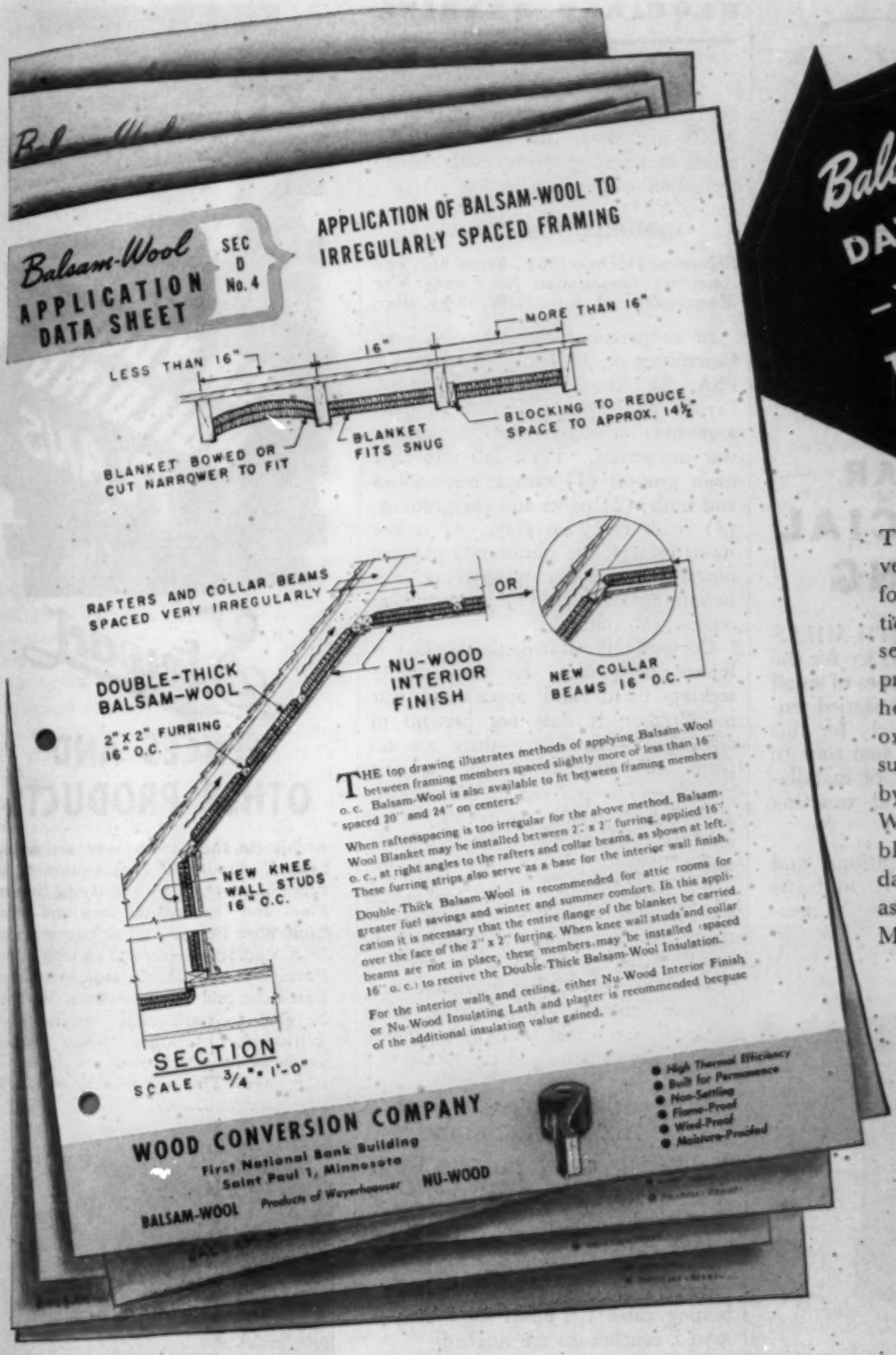
Barcol OVERdoors
Electric Door Operators
Switch Controls
Radio Control

Garages, both industrial and residential, can use this combination to excellent advantage. The Barcol OVERdoor is a weathertight, easy-working overhead type door with distinctive features such as roller-crank closing action, self-latching bolts, twin-torsion tailored counterbalancing springs, and continuous vertical track brackets. Thousands of successful installations testify to its acceptance by satisfied and discriminating users all over the country. Barcol Electric Door Operators take the work out of opening and closing all types of doors. Their features include a centrifugal clutch, magnetic brake, accurate electric stop control, a simple manual release, and safety switching arrangements to suit all conditions. People now are looking forward to better business and better living—you can help them achieve their aims by recommending Barcol OVERdoors with Electric Operators.

BARCOL

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY
102 MILL ST. • ROCKFORD, ILL.


Balsam-Wool
APPLICATION DATA SHEET
SEC D No. 4
APPLICATION OF BALSAM-WOOL TO IRREGULARLY SPACED FRAMING
LESS THAN 16"
16"
MORE THAN 16"
BLANKET BOWED OR CUT NARROWER TO FIT
BLANKET FITS SNUG
BLOCKING TO REDUCE SPACE TO APPROX. 14½"
RAFTERS AND COLLAR BEAMS SPACED VERY IRREGULARLY
OR
DOUBLE-THICK BALSAM-WOOL
2" x 2" FURRING 16" O.C.
NU-WOOD INTERIOR FINISH
NEW COLLAR BEAMS 16" O.C.
NEW KNEE WALL STUDS 16" O.C.
SECTION
SCALE 3/4" = 1'-0"
THE top drawing illustrates methods of applying Balsam-Wool between framing members spaced slightly more or less than 16" o. c. Balsam-Wool is also available to fit between framing members spaced 20" and 24" on centers.
When rafterspacing is too irregular for the above method, Balsam-Wool Blanket may be installed between 2" x 2" furring, applied 16" o. c., at right angles to the rafters and collar beams, as shown at left. These furring strips also serve as a base for the interior wall finish.
Double-Thick Balsam-Wool is recommended for attic rooms for greater fuel savings and winter and summer comfort. In this application it is necessary that the entire flange of the blanket be carried over the face of the 2" x 2" furring. When knee wall studs and collar beams are not in place, these members may be installed spaced 16" o. c. to receive the Double-Thick Balsam-Wool Insulation.
For the interior walls and ceiling, either Nu-Wood Interior Finish or Nu-Wood Insulating Lath and plaster is recommended because of the additional insulation value gained.
WOOD CONVERSION COMPANY
First National Bank Building
Saint Paul 1, Minnesota
BALSAM-WOOL
Products of Weyerhaeuser
NU-WOOD
High Thermal Efficiency
Built for Permanence
Non-Settling
Flame-Proof
Wind-Proof
Moisture-Proofed

Balsam-Wool DATA SHEETS —YOURS FOR THE ASKING!

These sheets offer you a convenient, authoritative source for data on applying insulation . . . because they represent the best application practices . . . because they help you provide greater owner-satisfaction in insulated structures. Prepared by the makers of Balsam-Wool—leaders in the field of blanket insulation—these data sheets are yours for the asking, without obligation. Mail the coupon for your set!

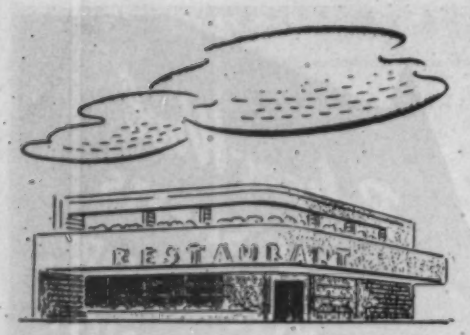
Balsam-Wool

SEALED INSULATION

1. Windproof
2. Moisture-proofed
3. Fire Resistant
4. Lasting
5. Non-settling
6. Highly Efficient

BALSAM-WOOL • NU-WOOD
Products of Weyerhaeuser

WOOD CONVERSION COMPANY
Dept. 115-2, First National Bank Bldg.
St. Paul 1, Minnesota
Gentlemen:
Please send me set of application data sheets.
Name ..... Address .....
City ..... State .....



Boiler Plant

...FOR THE POST WAR COMMERCIAL BUILDING

Here is a boiler, the SMITH-MILLS "25" which is the ideal choice for the monitor block or other types of small commercial buildings. Designed immediately pre-war expressly for this specialized market it has had time to prove itself in hundreds of installations under varying and exacting conditions.

For complete specifications and data see the H. B. SMITH catalogue in *Sweet's* or in the *Domestic Engineering Catalogue Directory*.

THE SMITH-MILLS "25" is available in models for hand firing, oil, stoker and gas.

H.B. Smith

CAST-IRON BOILERS

THE H. B. SMITH COMPANY, INC.
WESTFIELD, MASS.
Branch Offices and Sales Representatives in Principal Cities

REQUIRED READING

(Continued from page 114)

paid to the coordination of reading habits—the way the eyes generally travel in scanning pages—with the information sought in a catalog.

MEMORIALS THAT LIVE

***Columbus** 15, Ohio (30 E. Broad St.), The American Commission for Living War Memorials, 1944. 9 by 12 in. 59 pp. illus.*

In cooperation with the National Committee on Physical Fitness of the FSA, the American Commission for Living War Memorials here presents a number of suggestions for suitable war memorials. These fall into nine main groups: (1) camps, reservations and trails; (2) parks and playgrounds; (3) fields for team play; (4) indoor sports centers; (5) community physical fitness centers; (6) waterfronts; (7) swimming facilities; (8) winter sports centers; (9) stadiums.

Copiously illustrated, the booklet is replete with ideas for communities seeking useful and appropriate war memorials. It does not pretend to offer more than ideas—there are no plans or suggestions for specific projects. The purpose of the booklet, as the introduction points out, is to serve to stimulate ideas. It should be noted, however, that other types of memorial, not necessarily concerned with physical fitness, may appeal to many communities more strongly than anything here included. The booklet would have been more complete had it added another group or two dealing with municipal buildings, general community centers, and the like.

YOUR FIRST YEAR OF THE HOUSING BOOM

***New York** 1 (Empire State Bldg.), The Housing Institute, Inc., 1944. 8½ by 11 in. 36 pp. $5.00.*

Here is a good common-sense analysis of the housing field and its postwar prospects. Its chief value is its lack of beating about the bush: facts are presented, conclusions are reached.

Starting with that granddaddy of all planning problems, the probable size of the market, the Institute staff adds its predictions to the host of others: (1) a total housing need from 1945 to 1950 that "may well exceed six million dwelling units"; (2) a market demand "strongly in favor of those builders who plan to provide housing for the medium income brackets." An additional prediction is that in the postwar years the interest rate on mortgages is likely to be reduced to about 4 per cent.

(Continued on page 132)

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SYLVANIA NEWS
ARCHITECTURAL EDITION

FEBRUARY — *Published in the Interests of Better Sight and Sound* — 1945

Sylvania "Long-Slim" Fluorescents Open New Lighting Possibilities

New Lamps Ideal for Continuous-Row Lighting: Two Degrees of Brightness Possible

New long, small-diameter fluorescent lamps soon to go into commercial production at Sylvania Electric will provide the architect with an exceptionally flexible, adaptable source of illumination, opening up entirely new possibilities in the design of lighting installations.

The new lamps will be produced in 42" and 64" lengths, measuring only ¾" in diameter; and in 72" and 96" lengths in 1" diameter. They will be of the instant-starting type, requiring no starters, and will have substantially higher lumen outputs per watt than previous types of fluorescent lamps. All four of these new lamps will use a single-pin base.

The small diameters of these lamps suggest their use in many applications where space is limited or decorative aspects especially important. The longer units are particularly suitable for continuous-row installations.

An entirely novel feature — and one that contributes greatly to flexibility in lighting design—is that the lamps can be operated at either of two current ratings, depending on the ballast used. The lower current rating results in low brightness, desirable in narrow corridor areas and in decorative applications.

While the lamps are currently available only in sample quantities, and the new sockets and ballasts needed for their operation are not expected to be available for several months, the data published in the table below will be of assistance to architects in preliminary planning for the use of this novel, adaptable type of light source.

NEW MINIATURE LAMP

A fifth addition to Sylvania Electric's complete fluorescent line is a 13-watt miniature lamp, 21" long and ⅝" in diameter. This lamp is of the conventional starting type, but will require a new ballast for its operation.

With Sylvania standard fluorescent lamps, fluorescent tubing, and the new long-slim units at his disposal, the architect can plan postwar installations for every industrial and commercial requirement. A comparison of these three fluorescent sources will be published in a forthcoming issue of SYLVANIA NEWS.

THE NEW ADDITIONS TO SYLVANIA'S FLUORESCENT LINE

LONG-SLIM LAMPS	CURRENT MILLIAMPERES	APPROX. INITIAL LUMENS	LAMP LIFE HRS.
42" T6 (42", ¾")	100 200	900 1400	Life of Long-Slim fluorescent lamps at 200-milliampere operation is expected to be comparable to that of 40-watt standard fluorescent lamps. Definite ratings will be published as soon as life testing is conclusive.
64" T6 (64", ¾")	100 200	1400 2150	
72" T8 (72", 1")	100 200	1400 2350	
96" T8 (96", 1")	100 200	1950 3300	

MINIATURE LAMP	CURRENT MILLIAMPERES	APPROXIMATE INITIAL LUMENS	LAMP LIFE, HRS.*
21" T5 (21", ⅝")	160	Daylight . . . 490 White 580	1500 on a 3-hr. Cycle

*Under specified test conditions

SYLVANIA ELECTRIC

SYLVANIA ELECTRIC PRODUCTS INC., Salem, Massachusetts

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